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List of publications of AIIMS, New Delhi
for the month of June, 2017
[Source: www.pubmed.com].

1: Agarwal A, Vibha D, Srivastava AK, Shukla G, Prasad K. Guillain-Barre syndrome complicating chikungunya virus infection. *J Neurovirol*. 2017 Jun;23(3):504-507. doi: 10.1007/s13365-017-0516-1. Epub 2017 Feb 13. PubMed PMID: 28194661.

Chikungunya virus (CHIKV) is a mosquito-borne alphavirus which presents with symptoms of fever, rash, arthralgia, and occasional neurologic disease. While outbreaks have been earlier reported from India and other parts of the world, the recent outbreak in India witnessed more than 1000 cases. Various systemic and rarely neurological complications have been reported with CHIKV. We report two cases of Guillain-Barré syndrome (GBS) with CHIKV. GBS is a rare neurological complication which may occur after subsidence of fever and constitutional symptoms by several neurotropic viruses. We describe two cases of severe GBS which presented with rapidly progressive flaccid quadriplegia progressing to difficulty in swallowing and breathing. Both required mechanical ventilation and improved partly with plasmapheresis. The cases emphasize on (1) description of the rare complication in a setting of outbreak with CHIKV, (2) acute axonal as well as demyelinating neuropathy may occur with CHIKV, (3) accurate identification of this entity during outbreaks with dengue, both of which are vector borne and may present with similar complications.

DOI: 10.1007/s13365-017-0516-1

PMID: 28194661

2: Agarwal K, Sharma U, Sah RG, Mathur S, Hari S, Seenu V, Parshad R, Jagannathan NR. Pre-operative assessment of residual disease in locally advanced breast cancer patients: A sequential study by quantitative diffusion weighted MRI as a function of therapy. *Magn Reson Imaging*. 2017 Oct;42:88-94. doi: 10.1016/j.mri.2017.06.002. Epub 2017 Jun 13. PubMed PMID: 28627463.

PURPOSE: The potential of diffusion weighted imaging (DWI) in assessing pathologic response and surgical margins in locally advanced breast cancer patients (n=38) undergoing neoadjuvant chemotherapy was investigated.

METHODS: DWI was performed at pre-therapy (Tp0), after I (Tp1) and III (Tp3) NACT at 1.5T. Apparent diffusion coefficient (ADC) of whole tumor (ADCWT), solid tumor (ADCST), intra-tumoral necrosis (ADCNec) was determined. Further, ADC of 6 consecutive shells (5mm thickness each) including tumor margin to outside tumor margins (OM1 to OM5) was calculated and the data analyzed to define surgical margins.

RESULTS: Of 38 patients, 6 were pathological complete responders (pCR), 19 partial responders (pPR) and 13 were non-responders (pNR). Significant increase was observed in ADCST and ADCWT in pCR and pPR following therapy. Pre-therapy ADC was significantly lower in pCR compared to pPR and pNR indicating the heterogeneous nature of tumor which may affect drug perfusion and consequently the response. ADC of outside margins (OM1, OM2, and OM3) was significantly different among pCR, pPR and pNR at Tp3 which may serve as response predictive parameter. Further, at Tp3, ADC of outside margins (OM1, OM2, and OM3) was significantly lower compared to that seen at Tp0 in pCR, indicating the presence of residual disease in these shells.

CONCLUSION: Pre-surgery information may serve as a guide to define cancer free margins and the extent of residual disease which may be useful in planning breast conservation surgery.

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PMID: 28627463

3: Agarwala S, Mitra A, Bansal D, Kapoor G, Vora T, Prasad M, Chinnaswamy G, Arora B, Radhakrishnan V, Laskar S, Kaur T, Dhaliwal RS, Rath GK, Bakhshi S. Management of Pediatric Malignant Germ Cell Tumors: ICMR Consensus Document. *Indian J Pediatr.* 2017 Jun;84(6):465-472. doi: 10.1007/s12098-017-2308-2. Epub 2017 Apr 1. Review. PubMed PMID: 28364343.

With the introduction of cisplatin, the outcome of children with malignant germ cell tumors (MGCT) has improved to nearly 90% 5 year survival. Over the years, through the results of various multinational co-operative trials, the chemotherapy and surgical guidelines for both the gonadal and extra-gonadal MGCTs have been refined to decrease the early and late morbidities and at the same time improve survival. Introduction of risk categorization has further added to this effort. There has been no recommendation on how the children with malignant germ cell tumors should be treated in India. The current manuscript is written with the objective of developing a consensus guideline for practitioners at a National level. Based on extensively reviewed literature and personal experience of the major pediatric oncology centres in India, the ICMR Expert group has made recommendations for management of children with MGCT India.

DOI: 10.1007/s12098-017-2308-2
PMID: 28364343

4: Agarwala S, Gupta A, Bansal D, Vora T, Prasad M, Arora B, Kapoor G, Chinnaswamy G, Radhakrishnan V, Laskar S, Kaur T, Dhaliwal RS, Rath GK, Bakhshi S. Management of Hepatoblastoma: ICMR Consensus Document. *Indian J Pediatr.* 2017 Jun;84(6):456-464. doi: 10.1007/s12098-017-2301-9. Epub 2017 Mar 29. Review. PubMed PMID: 28353129.

Dramatic advancement has been made in the management of children with hepatoblastoma (HB) over the past 3 decades owing to the improvement in diagnostic imaging, new chemotherapeutic agents, better surgical care and availability of liver transplantation. These advances are the end results of contributions from 4 major study groups across the globe including International Society of Pediatric Oncology - Liver Tumor Strategy Group (SIOPEL), Children's Oncology Group (COG), German Pediatric Hematology Oncology Group (GPOH) and Japanese Pediatric Liver Tumor Study Group (JPLT). The current manuscript is written with the objective of developing a consensus guideline for practitioners at a National level. Based on literature and personal experience over last 3 decades, the Indian Council of Medical Research (ICMR) Expert group has made recommendations for management of children with HB in resource-challenged nations including India.

DOI: 10.1007/s12098-017-2301-9
PMID: 28353129

5: Aggarwal S, Ahuja V, Paul J. Attenuated GABAergic Signaling in Intestinal Epithelium Contributes to Pathogenesis of Ulcerative Colitis. *Dig Dis Sci.* 2017 Oct;62(10):2768-2779. doi: 10.1007/s10620-017-4662-3. Epub 2017 Jun 30. PubMed PMID: 28667430.

BACKGROUND: Neuromediators produced by enteric nervous system regulate inflammatory processes via interacting with enteric immune system. Role of γ -aminobutyric acid (GABA), which is also a neuromediator, has been implicated in autoimmune diseases like multiple sclerosis, type 1 diabetes, and rheumatoid arthritis, where they modulate the immune responses. However, its role in ulcerative colitis (UC) has not been defined.

AIMS: This study was carried out to investigate the role of GABA and its signaling components in pathogenesis of UC.

METHODS: Peripheral blood, colon mucosal biopsy, and fecal specimens were collected from UC and control groups. Quantification of GABA was done using ELISA. Expression of GABAergic signal system components was analyzed through RT-PCR analysis. Enumeration of GABA-producing bacteria was done by qPCR analysis. Activity of p38 MAPK and expression of proinflammatory cytokines were determined by immunohistochemistry and RT-PCR analysis, respectively.

RESULTS: GABA levels were significantly reduced in patients with UC as compared to control group when measured in serum and colon biopsy. Altered expression of GABAergic signal system was observed in UC patients. Reduced abundance of selected GABA-producing bacteria was detected in stool samples of UC patients as compared to control. p38 MAPK activity and expression of its downstream effector cytokines were found to be increased in UC patients as compared to control.

CONCLUSIONS: Reduced levels of GABA were observed in patients with UC, and this leads to hyperactivation of p38 MAPK and overexpression of downstream effector cytokines suggesting a role of GABA in pathogenesis of UC.

DOI: 10.1007/s10620-017-4662-3

PMID: 28667430 [Indexed for MEDLINE]

6: Ahlawat P, Rawat S, Kakria A, Devnani B, Wahi IK, Simson DK. Reirradiation with IMRT for recurrent head and neck cancer: A single-institutional report on disease control, survival, and toxicity. *Rep Pract Oncol Radiother.* 2017 Jul-Aug;22(4):331-339. doi: 10.1016/j.rpor.2017.05.001. Epub 2017 Jun 7. PubMed PMID: 28663716; PubMed Central PMCID: PMC5472265.

AIM: To study and explores the feasibility and efficacy of re-irradiation (Re-RT) for locally recurrent head and neck cancer (HNC) and second primary (SP) malignancies.

BACKGROUND: The most common form of treatment failure after radiotherapy (RT) for HNC is loco-regional recurrence (LRR), and around 20-50% of patients develop LRR. Re-irradiation (Re-RT) has been the primary standard of care in the last decade for unresectable locally recurrent/SP HNC.

MATERIALS AND METHODS: It was a retrospective analysis in which we reviewed the medical records of 51 consecutive patients who had received Re-RT to the head and neck region at our institute between 2006 and 2015.

RESULTS: Forty-eight patients were included for assessment of acute and late toxicities, response evaluation at 3 months post Re-RT, and analyses of locoregional control (LRC) and overall survival (OS). The median LRC was 11.2 months, and at 2 and 5 years the LRC rates were 41% and 21.2%, respectively. A multivariate analysis revealed two factors: initial surgical resection performed prior to Re-RT, and achievement of CR at 3 months after completion of Re-RT to be significantly associated with a better median LRC. The median OS was 28.2 months, and at 1, 2, and 5 years, OS were 71.1%, 55.9% and 18%, respectively. A multivariate analysis revealed initial surgical resection performed prior to Re-RT, and achievement of CR at 3 months post completion of Re-RT being only two factors significantly associated with a better median OS. Acute toxicity reports showed that no patients developed grade 5 toxicity, and 2 patients developed grade 4 acute toxicities.

CONCLUSION: Re-RT for the treatment of recurrent/SP head and neck tumors is feasible and effective, with acceptable toxicity. However, appropriate patient selection criteria are highly important in determining survival and treatment outcomes.

DOI: 10.1016/j.rpor.2017.05.001

PMCID: PMC5472265 [Available on 2018-07-01]

PMID: 28663716

7: Ansari MT, Kotwal PP, Majeed A. Intraosseous myoepithelioma: a rare tumour in

the hand. *J Hand Surg Eur Vol.* 2017 Jun;42(5):530-531. doi: 10.1177/1753193416676229. Epub 2016 Nov 1. PubMed PMID: 27807178.

8: Anthwal D, Gupta RK, Bhalla M, Bhatnagar S, Tyagi JS, Haldar S. Direct Detection of Rifampin and Isoniazid Resistance in Sputum Samples from Tuberculosis Patients by High-Resolution Melt Curve Analysis. *J Clin Microbiol.* 2017 Jun;55(6):1755-1766. doi: 10.1128/JCM.02104-16. Epub 2017 Mar 22. PubMed PMID: 28330890; PubMed Central PMCID: PMC5442532.

Drug-resistant tuberculosis (TB) is a major threat to TB control worldwide. Globally, only 40% of the 340,000 notified TB patients estimated to have multidrug-resistant-TB (MDR-TB) were detected in 2015. This study was carried out to evaluate the utility of high-resolution melt curve analysis (HRM) for the rapid and direct detection of MDR-TB in *Mycobacterium tuberculosis* in sputum samples. A reference plasmid library was first generated of the most frequently observed mutations in the resistance-determining regions of *rpoB*, *katG*, and an *inhA* promoter and used as positive controls in HRM. The assay was first validated in 25 MDR *M. tuberculosis* clinical isolates. The assay was evaluated on DNA isolated from 99 *M. tuberculosis* culture-positive sputum samples that included 84 smear-negative sputum samples, using DNA sequencing as gold standard. Mutants were discriminated from the wild type by comparing melting-curve patterns with those of control plasmids using HRM software. Rifampin (RIF) and isoniazid (INH) monoresistance were detected in 11 and 21 specimens, respectively, by HRM. Six samples were classified as MDR-TB by sequencing, one of which was missed by HRM. The HRM-RIF, INH-*katG*, and INH-*inhA* assays had 89% (95% confidence interval [CI], 52, 100%), 85% (95% CI, 62, 97%), and 100% (95% CI, 74, 100%) sensitivity, respectively, in smear-negative samples, while all assays had 100% sensitivity in smear-positive samples. All assays had 100% specificity. Concordance of 97% to 100% (κ value, 0.9 to 1) was noted between sequencing and HRM. Heteroresistance was observed in 5 of 99 samples by sequencing. In conclusion, the HRM assay was a cost-effective (Indian rupee [INR]400/US\$6), rapid, and closed-tube method for the direct detection of MDR-TB in sputum, especially for direct smear-negative cases.

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DOI: 10.1128/JCM.02104-16
PMCID: PMC5442532 [Available on 2017-12-01]
PMID: 28330890

9: Ashlesh P, Kumar SS, Preet KK, Vinay G. Deep brain stimulation of subthalamic nucleus helps in improving late phase motor planning in Parkinson's disease. *Clin Neurol Neurosurg.* 2017 Sep;160:30-37. doi: 10.1016/j.clineuro.2017.06.011. Epub 2017 Jun 15. PubMed PMID: 28641127.

OBJECTIVE: Deep brain stimulation of subthalamic nucleus (DBS-STN) is a well-accepted treatment for Parkinson's disease (PD) but its effect on motor planning in the disease is yet unclear. This study examines the effect of switching the stimulation ON and OFF on components of Bereitschaftspotentials in PD.

PATIENTS AND METHODS: Scalp Bereitschaftspotentials were recorded during self-paced right wrist extensions at Fz, Cz, Pz, C3 and C4 sites in patients on DBS-STN plus medications (DBS-STN group) as treatment modality or on medications only (Med group) and compared with age matched healthy controls. In DBS-STN group, the potentials were recorded in stimulation ON, stimulation OFF, and again after re-switching stimulation ON-2. Offline analysis of potentials was done to calculate peak amplitude, late slope (-500 to 0ms) and early slope (-1500 to

-500ms).

RESULTS: We observed that the two components of Bereitschaftspotentials in stimulation ON state were comparable to those in age matched controls. The late slope was found to be significantly reduced during stimulation OFF as compared to stimulation ON at Cz ($p < 0.001$), C3 ($p < 0.001$) and C4 ($p < 0.01$) electrode sites. This parameter failed to improve on re-switching stimulation ON at Cz ($p < 0.01$). No significant change was observed in early part of Bereitschaftspotentials among any of the conditions.

CONCLUSION: Our study shows that DBS-STN along with anti-parkinsonian medications helps in improving both components of Bereitschaftspotentials in PD. Switching stimulation OFF for fifteen minutes principally affects the late component i.e. the execution part of motor planning; which cannot be reversed by re-switching ON. Thus the chronic and acute effects of switching DBS-STN ON are different and principally affect the later part of motor planning.

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DOI: 10.1016/j.clineuro.2017.06.011

PMID: 28641127

10: Bandyopadhyay T, Saini I. Vitamin D in newborns. A randomised controlled trial comparing daily and single oral bolus vitamin D in infants. *J Paediatr Child Health*. 2017 Jun;53(6):615. doi: 10.1111/jpc.13534. PubMed PMID: 28573813.

11: Bansal D, Totadri S, Chinnaswamy G, Agarwala S, Vora T, Arora B, Prasad M, Kapoor G, Radhakrishnan V, Laskar S, Kaur T, Rath GK, Bakhshi S. Management of Neuroblastoma: ICMR Consensus Document. *Indian J Pediatr*. 2017 Jun;84(6):446-455. doi: 10.1007/s12098-017-2298-0. Epub 2017 Apr 3. Review. PubMed PMID: 28367616.

Neuroblastoma (NBL) is the most common extra-cranial solid tumor in childhood. High-risk NBL is considered challenging and has one of the least favourable outcomes amongst pediatric cancers. Primary tumor can arise anywhere along the sympathetic chain. Advanced disease at presentation is common. Diagnosis is established by tumor biopsy and elevated urinary catecholamines. Staging is performed using bone marrow and mIBG scan (FDG-PET/bone scan if mIBG unavailable or non-avid). Age, stage, histopathological grading, MYCN amplification and 11q aberration are important prognostic factors utilized in risk stratification. Low-risk disease including Stage 1 and asymptomatic Stage 2 disease has an excellent prognosis with non-mutilating surgery alone. Perinatal adrenal neuroblastoma may be managed with close observation alone. Intermediate-risk disease consisting largely of unresectable/symptomatic Stage 2/3 disease and infants with Stage 4 disease has good outcome with few cycles of chemotherapy followed by surgical resection. Paraspinal neuroblastomas with cord compression are treated emergently, typically with upfront chemotherapy. Asymptomatic Stage 4S disease may be followed closely without treatment. Organ dysfunction and age below 3 mo would warrant chemotherapy in 4S. High-risk disease includes older children with Stage 4 disease and MYCN amplified tumors. High-risk disease has a suboptimal outcome, though the survival is improving with multimodality therapy including autologous stem cell transplant and immunotherapy. Relapse after multimodality therapy is difficult to salvage. Late presentation, lack of transplant facility, malnutrition and treatment abandonment are additional hurdles for survival in India. The review provides a consensus document on management of NBL for developing countries, including India.

DOI: 10.1007/s12098-017-2298-0

PMID: 28367616

12: Bhari N, Gupta S. Tacrolimus 0.1% ointment applied under occlusion using cling film clears chronic actinic dermatitis resistant to systemic treatment. *Int J Dermatol.* 2017 Jun;56(6):e139-e141. doi: 10.1111/ijd.13557. Epub 2017 Feb 27. PubMed PMID: 28239836.

13: Bhatt S, Mishra B, Tandon A, Manchanda S, Parthasarathy G. Superior Mesenteric Artery Syndrome in association with Abdominal Tuberculosis: An Eye Opener. *Malays J Med Sci.* 2017 May;24(3):96-100. doi: 10.21315/mjms2017.24.3.12. Epub 2017 Jun 30. PubMed PMID: 28814938; PubMed Central PMCID: PMC5545623.

Superior Mesenteric Artery Syndrome (SMAS) is a rare clinical entity presenting as acute or chronic upper gastrointestinal obstruction. It occurs due to compression of third part of duodenum between abdominal aorta and overlying superior mesenteric artery caused by a decrease in angle between the two vessels. Rapid loss of retroperitoneal fat, in conditions leading to severe weight loss is the main factor responsible for this disorder. Superior mesenteric artery syndrome in association with abdominal tuberculosis has not been reported earlier to the best of our knowledge. Therefore, an unknown cause (SMAS) of upper gastrointestinal obstruction in a patient of abdominal tuberculosis is being presented for the first time through this case report. An imaging diagnosis of SMAS was made on contrast enhanced CT abdomen which also confirmed the clinical suspicion of abdominal tuberculosis in the patient. The patient was managed conservatively and recovered without requiring any surgical intervention for the obstructive symptoms.

DOI: 10.21315/mjms2017.24.3.12

PMCID: PMC5545623

PMID: 28814938

14: Bhattacharjee S, Som A, Maitra S. Comparison of LMA Supreme[®] with i-gel[®] and LMA ProSeal[®] in children for airway management during general anaesthesia: A meta-analysis of randomized controlled trials. *J Clin Anesth.* 2017 Sep;41:5-10. doi: 10.1016/j.jclinane.2017.04.019. Epub 2017 Jun 1. PubMed PMID: 28802606.

STUDY OBJECTIVE: A few randomized trials have compared LMA Supreme[™] with LMA ProSeal[™] and i-gel[™] in children but their conclusions varied widely. This systematic review and meta analysis has compared the former device with the latter two devices.

DESIGN: Meta-analysis and systematic review using the Mantel-Haenszel method and pooled mean difference using inverse variance method.

SETTING: Meta-analysis of published prospective randomized controlled trials.

PATIENTS: Paediatric patients undergoing surgery under general anaesthesia.

INTERVENTION: LMA Supreme[™] with LMA ProSeal[™] or i-gel[™] as airway management device.

RESULTS: Electronic database searching revealed four randomized trials where LMA Supreme[™] has been compared with LMA ProSeal[™] and three trials where a comparison was made between LMA Supreme[™] and i-gel[™] in paediatric population. LMA Supreme[™] provided similar oropharyngeal leak pressure when compared to LMA ProSeal[™] [mean difference (95% CI) 1.57 (-1.33, 4.47)cm H₂O; p=0.29] and i-gel[™] [mean difference (95% CI) 1.18 (-2.11, 4.47)cm H₂O; p=0.48]. First insertion success rate is also similar when LMA Supreme[™] is compared to LMA ProSeal[™] [RR (95% CI) 1.03 (0.97, 1.1); p=0.74] and i-gel[™] [RR (95% CI) 0.99 (0.95, 1.03); p=0.51]. Device insertion is significantly faster with LMA Supreme[™] than i-gel[™] [mean difference (95% CI) 1.87 (0.93, 2.81) s; p<0.0001].

CONCLUSION: We suggest that LMA Supreme[™] may be an alternative to LMA ProSeal[™] and i-gel[™] in children for airway management during general anaesthesia.

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DOI: 10.1016/j.jclinane.2017.04.019
PMID: 28802606

15: Bhattacharjee S, Soni KD, Maitra S, Baidya DK. Levosimendan does not provide mortality benefit over dobutamine in adult patients with septic shock: A meta-analysis of randomized controlled trials. *J Clin Anesth.* 2017 Jun;39:67-72. doi: 10.1016/j.jclinane.2017.03.011. Epub 2017 Mar 30. PubMed PMID: 28494911.

OBJECTIVES: Despite of advancement in intensive care medicine, sepsis and septic shock carry a high mortality. Levosimendan, an inodilator, may be promising for septic shock patients with myocardial dysfunction; however, firm evidence is lacking. In this meta- analysis of randomized controlled trials, levosimendan has been compared with dobutamine in adult patients with sepsis and septic shock.

DESIGN: Meta-analysis of randomized controlled trial.

SETTING: Intensive-care unit.

PARTICIPANTS: Adult septic shock patients.

INTERVENTION: Adult septic shock patients received dobutamine or levosimendan.

MAIN OUTCOME MEASURE: Mortality at longest follow-up, blood lactate level, cardiac index and noradrenaline requirement.

RESULTS: Data from 7 randomized trials have been included in this meta-analysis. Levosimendan has no benefit in terms of mortality at longest follow up in comparison to dobutamine (Odds ratio 0.77, 95% CI 0.45, 1.32; p=0.34) and length of ICU stay (MD -4.7days, 95% CI -10.3, 0.9days, p=0.10). Patients received levosimendan had less blood lactate level (standardized mean difference -0.95; 95% CI -1.64, -0.27; p=0.006) and higher cardiac index (mean difference 0.44; 95% CI 0.17, 0.71; p=0.001). Noradrenaline requirements are similar in both the groups.

CONCLUSION: There is no evidence that levosimendan is superior to dobutamine in adult patients with sepsis and septic shock. Further large randomized trials are necessary in this area.

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DOI: 10.1016/j.jclinane.2017.03.011
PMID: 28494911

16: Bhoi D, Dey M, Naskar S, Talawar P. Early diagnosis of a nearly missed complication made by anatomical landmark guided internal jugular vein cannulation. *Asian J Anesthesiol.* 2017 Jun;55(2):48-49. doi: 10.1016/j.aja.2017.05.001. Epub 2017 May 31. PubMed PMID: 28971807.

17: Bindu B, Singh GP, Chowdhury T, Schaller B. Rhinitis and sleep disorders: The trigeminocardiac reflex link? *Med Hypotheses.* 2017 Jun;103:96-99. doi: 10.1016/j.mehy.2017.04.019. Epub 2017 Apr 25. PubMed PMID: 28571821.

Rhinitis, allergic or non-allergic, is an inflammatory condition of the nose. It is associated with a wide range of sleep disorders that are generally attributed to nasal congestion and presence of inflammatory mediators like cytokines and interleukins. However, the pathophysiological mechanisms behind these sleep disorders remain unclear. On the other hand, the trigeminocardiac reflex (TCR) has recently been linked to various sleep disorders like obstructive sleep apnea, sleep bruxism and rapid eye movement (REM) sleep apnea. TCR can be incited by stimulation of the trigeminal nerve or the area innervated by its branches including the nasal mucosa. Trigeminal nasal afferents can be activated on

exposure to noxious stimuli (mechanical or chemical) like ammonia vapors, carbon-dioxide, nicotine, hypertonic saline, air-puffs and smoke. In rhinitis, there is associated neuronal hyper-responsiveness of sensory nasal afferents due to inflammation (which can be suppressed by steroids). This may further lead to increased occurrence of TCR in rhinitis. Moreover, there is involvement of autonomic nervous system both in rhinitis and TCR. In TCR, parasympathetic over activity and sympathetic inhibition leads to sudden onset bradycardia, hypotension, apnea and gastric motility. Also, the autonomic imbalance reportedly plays a significant role in the pathophysiology of rhinitis. Thus, considering these facts we hypothesize that the TCR could be the link between rhinitis and sleep disorders and we believe that further research in this direction may yield significant development in our understanding of sleep disorders in rhinitis.

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DOI: 10.1016/j.mehy.2017.04.019

PMID: 28571821

18: Bisht S, Dada R. Oxidative stress: Major executioner in disease pathology, role in sperm DNA damage and preventive strategies. *Front Biosci (Schol Ed)*. 2017 Jun 1;9:420-447. Review. PubMed PMID: 28410127.

Oxidative stress (OS) has been implicated in a wide array of diseases such as neurodegenerative disorders, autoimmune diseases, complex lifestyle diseases and cancer. OS is caused by an imbalance in production of Reactive Oxygen Species (ROS) and antioxidant defenses in the cell which results in the damage of cellular components, inactivate essential metabolic enzymes and disrupt signal transduction pathways. OS induces peroxidative damage to the sperm plasma membrane, DNA fragmentation in sperm nuclear/mitochondrial genome and causes dysregulation in levels of mRNAs/transcripts. OS induced sperm DNA damage is associated with male infertility, recurrent pregnancy loss (RPL), congenital malformations and high frequency of childhood disorders. OS induced pathologies are caused by endogenous and exogenous factors, majority of which, are modifiable. Antioxidant supplementation could help in relieving OS, however, its long-term usage may disrupt the intricate oxidation-reduction balance and can lead to "Reductive Stress". Adoption of simple lifestyle interventions may relieve OS and can also aid in its management. This may improve overall quality of life (QOL) and can reduce prevalence of OS induced diseases.

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19: Bopanna S, Nayak B, Prakash S, Shalimar, Mahapatra SJ, Garg PK. Increased oxidative stress and deficient antioxidant levels may be involved in the pathogenesis of idiopathic recurrent acute pancreatitis. *Pancreatology*. 2017 Jul - Aug;17(4):529-533. doi: 10.1016/j.pan.2017.06.009. Epub 2017 Jun 20. PubMed PMID: 28687456.

BACKGROUND: Increased Oxidative Stress (OS) is implicated in the pathogenesis of Chronic Pancreatitis (CP). Whether or not OS contributes to disease progression through the stages of Recurrent Acute Pancreatitis (RAP), to CP is not known. Increased OS, if present in RAP could be an important therapeutic target in preventing progression of RAP to CP.

OBJECTIVE: To assess the oxidative stress and antioxidant status in patients with idiopathic RAP.

METHODS: 50 consecutive patients with Idiopathic Recurrent Acute Pancreatitis (IRAP) were included. Markers of OS [4-hydroxynonenol (4-HNE), malondialdehyde

(MDA) and serum SOD (S-SOD)] and antioxidant status [ferric reducing the ability of plasma (FRAP), Glutathione peroxidase (GPX) and Vitamin C (Vit C)] were measured in quiescent phase and during an episode of pancreatitis. Their levels were compared with those in age and sex matched healthy controls and patients with CP.

RESULTS: The mean age of patients with IRAP was 22.2 ± 7.7 years and 39 (78%) were males. Levels of 4-HNE were significantly increased in patients with IRAP compared with healthy controls (3.03 ± 2.35 vs. 2.12 ± 1.29 ng/ml; $p = 0.03$) and were even higher during an episode of acute pancreatitis (5.21 ± 3.51 ng/ml; $p = 0.03$). Antioxidant levels were reduced in IRAP compared with healthy controls as measured by FRAP (707.0 ± 144.9 vs. 528.8 ± 120.0 $\mu\text{mol}/\text{Fe}^{2+}$ liberated; $p = 0.0001$) and GPX (1472 ± 375.7 vs. 910.0 ± 558.5 pg/ml; $p = 0.001$). OS and antioxidant profiles were similar in IRAP and CP with no significant difference. CONCLUSION: OS is increased in patients with IRAP, more so during an acute episode. Antioxidant levels are also reduced suggesting that OS may play a role in the pathogenesis of IRAP and its progression to CP.

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PMID: 28687456

20: Chandrashekhara SH, Kumar A, Gamanagatti S, Kapoor K, Mukund A, Aggarwal D, Sinha S. Erratum to: Unusual traumatic spondyloptosis causing complete transection of spinal cord. *Int Orthop*. 2017 Jun;41(6):1285. doi: 10.1007/s00264-017-3479-1. PubMed PMID: 28386729.

21: Chawla H, Tandon N. Interpreting Cardiovascular Endpoints in Trials of Antihyperglycemic Drugs. *Am J Cardiovasc Drugs*. 2017 Jun;17(3):203-215. doi: 10.1007/s40256-017-0215-6. Review. PubMed PMID: 28197977.

In view of the significant cardiovascular (CV) morbidity and mortality in patients with type 2 diabetes mellitus, and concerns raised about the CV safety of some glucose-lowering drugs, the US Food and Drug Administration (FDA) issued guidance for the industry in 2008 to demonstrate CV safety for the approval of all new antihyperglycemic drugs. Seven randomized controlled trials involving around 60,000 participants have been completed so far and have demonstrated the CV safety of dipeptidyl peptidase 4 inhibitors (saxagliptin, alogliptin and sitagliptin), glucagon-like peptide-1 receptor agonists (lixisenatide, liraglutide and semaglutide) and a sodium-glucose co-transporter 2 inhibitor (empagliflozin) in patients with type 2 diabetes. Three of these trials have in fact reported superiority of the study drug over placebo in terms of CV outcomes. However, all these trials were primarily designed as non-inferiority trials to exclude an unacceptable risk of CV events with these drugs in the shortest possible time period. The potential long-term benefit or risks were not assessed effectively as the median follow-up in these studies was limited to 1.5-3 years. Also, these trials included patients with relatively long duration of diabetes, advanced atherosclerosis and higher CV risk. Thus, these trials were not intended to assess CV benefit and are best interpreted as evidence for CV safety of these antihyperglycemic medications.

DOI: 10.1007/s40256-017-0215-6

PMID: 28197977

22: Chawla R, Kumar V, Tripathy K, Kumar A, Venkatesh P, Shaikh F, Vohra R, Molla K, Verma S. Combined Hamartoma of the Retina and Retinal Pigment Epithelium: An Optical Coherence Tomography-Based Reappraisal. *Am J Ophthalmol*. 2017

Sep;181:88-96. doi: 10.1016/j.ajo.2017.06.020. Epub 2017 Jun 29. PubMed PMID: 28669779.

PURPOSE: To analyze the optical coherence tomography (OCT) characteristics of combined hamartoma of the retina and retinal pigment epithelium (CHRRPE) involving the macula.

DESIGN: Retrospective, observational case series.

METHODS: setting: Single institutional.

STUDY POPULATION: Fourteen consecutive patients of CHRRPE were included.

OBSERVATION PROCEDURES: The authors analyzed the clinical features, color fundus photography, and swept-source or spectral-domain OCT of all the involved eyes.

MAIN OUTCOME MEASURES: OCT characteristics, especially the involvement of the retinal pigment epithelium (RPE).

RESULTS: A total of 16 eyes of 5 female and 9 male patients were analyzed. The mean age (\pm SD) was 17.9 ± 6.4 (range 10-34) years. Mean best-corrected visual acuity (\pm SD) in logMAR was 0.9 ± 0.5 ($20/160 \pm 20/60$). The OCT was suggestive of a focal mass-like lesion primarily involving the inner retinal layers limited externally by the outer plexiform layer (OPL) in 15 eyes (93.7%). The OPL appeared to have a saw-tooth appearance ("intraretinal peaks") in 12 eyes (75%). The convolutions of the OPL were broader and deeper in some eyes (5 eyes, 31.2%), giving an "omega sign" (ω) appearance. The ellipsoid zone appeared intact in 13 eyes (81.2%). The RPE band appeared intact in all eyes.

CONCLUSIONS: Considering the OCT features, available evidence, and embryology, we propose that the true nature of CHRRPE should be reanalyzed. In our series, CHRRPE was noted to be primarily a hamartoma arising from the inner retinal layers. A majority of cases were limited posteriorly by the OPL without any involvement of the outer retinal layers and RPE.

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23: Cheng AL, Cornelio G, Shen L, Price T, Yang TS, Chung IJ, Dai GH, Lin JK, Sharma A, Yeh KH, Ma B, Zaatari A, Guan Z, Masood N, Srimuninnimit V, Yau T, Gibbs P, Wang X, Doval DC, Oh ST, Shim BY, Gorospe C, Wang HM, Sirachainan E, Hill A, Suh KW, Beier F, Chatterjee S, Lim R. Efficacy, Tolerability, and Biomarker Analyses of Once-Every-2-Weeks Cetuximab Plus First-Line FOLFOX or FOLFIRI in Patients With KRAS or All RAS Wild-Type Metastatic Colorectal Cancer: The Phase 2 APEC Study. *Clin Colorectal Cancer*. 2017 Jun;16(2):e73-e88. doi: 10.1016/j.clcc.2016.08.005. Epub 2016 Sep 7. PubMed PMID: 27780749.

BACKGROUND: In patients with KRAS wild-type (wt) metastatic colorectal cancer (mCRC), outcomes with first-line chemotherapies are improved by adding weekly cetuximab. The APEC study investigated first-line once-every-2-weeks cetuximab plus chemotherapy for patients with KRAS wt mCRC; additional biomarker subgroups were also analyzed.

PATIENTS AND METHODS: APEC was a nonrandomized phase 2 trial conducted in the Asia-Pacific region. Patients (n = 289) received once-every-2-weeks cetuximab with investigator's choice of chemotherapy (FOLFOX or FOLFIRI). The primary end point was best confirmed overall response rate (BORR); progression-free survival (PFS) and overall survival (OS) were secondary end points. Early tumor shrinkage (ETS) and depth of response (DpR) were also evaluated.

RESULTS: In the KRAS wt population, BORR was 58.8%, median PFS 11.1 months, and median OS 26.8 months. Expanded RAS mutational analysis revealed that patients with RAS wt mCRC had better outcomes (BORR = 64.7%; median PFS = 13.0 months; median OS = 28.4 months). The data suggest that ETS and DpR may be associated with survival outcomes in the RAS wt population. Although this study was not

designed to formally assess differences in outcome between treatment subgroups, efficacy results appeared similar for patients treated with FOLFOX and FOLFIRI. There were no new safety findings; in particular, grade 3/4 skin reactions were within clinical expectations.

CONCLUSION: The observed activity and safety profile is similar to that reported in prior first-line pivotal studies involving weekly cetuximab, suggesting once-every-2-weeks cetuximab is effective and tolerable as first-line therapy and may represent an alternative to weekly administration.

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PMID: 27780749

24: Chopra GS, Bhardwaj JR, Mehra NK, Dash SC. IMMUNOLOGICAL MONITORING IN TRANSPLANTATION. *Med J Armed Forces India*. 1997 Jan;53(1):35-39. doi: 10.1016/S0377-1237(17)30642-1. Epub 2017 Jun 26. PubMed PMID: 28769432; PubMed Central PMCID: PMC5530838.

Sixty eight patients who had undergone live related donor renal transplantation (LRD), were evaluated for soluble interleukin-2 receptors (sIL-2R), tumour necrosis factor alpha (TNF- α) and autoantibodies against IgG(Fab')₂ and IgG(Fc), at pre- and various post-transplant intervals. Serum sIL-2R levels were significantly elevated in hemodialysed patients awaiting transplantation (mean 259.2 ± 90.5 pmol/L) as compared to healthy volunteers (mean 52.6 ± 16.7 pmol/L). In 96 samples obtained from patients with well-functioning grafts (WFG), the post-transplant sIL-2R levels (135.6 ± 65.4 pmol/L) were significantly lower ($p < 0.001$) than their pretransplant values. Eight patients with cyclosporin-A (CsA) nephrotoxicity, 14 with reversible acute tubular necrosis (ATN) and 4 patients with partial surgical obstruction, revealed moderate levels (99.0 ± 13.7 , 184.1 ± 47.5 , 156.7 ± 40.4 pmol/L respectively). On the other hand, 29 patients with acute rejection episodes, 11 with chronic rejection and 8 with infections had significantly higher levels (307.9 ± 89.3 , 253.3 ± 68.6 , 345 ± 110.6 pmol/L), ($p < 0.001$). TNF- α levels were also raised in rejection and infective episodes but were not statistically significant. Serum anti-IgG(Fab')₂ levels were found higher (0.407 OD) in WFG as compared to those with declining graft functions (0.279 OD). On the contrary high pre- and post-transplant anti-IgG(Fc) activity was associated with increased graft rejection and lower survival rate.

DOI: 10.1016/S0377-1237(17)30642-1

PMCID: PMC5530838

PMID: 28769432

25: Chopra GS, Narula AS, Dash SC, Mehra NK. CLINICAL APPLICATION OF FLOW CYTOMETRY IN LIVE RELATED DONOR RENAL TRANSPLANTATION. *Med J Armed Forces India*. 1996 Jan;52(1):3-6. doi: 10.1016/S0377-1237(17)30824-9. Epub 2017 Jun 26. PubMed PMID: 28769326; PubMed Central PMCID: PMC5530271.

To monitor the activity of the humoral component in graft dysfunction following renal transplantation using live related donors, flowcytometric cross-match procedure was adopted. Antidonator antibodies were detected in the sera of both pre- and post-transplant patients using conventional serological cytotoxicity cross-match and flowcytometric cross-match assays. In the 52 pretransplant samples no significant differences were observed in flowcytometric and cytotoxicity tests except in 2 secondary transplant cases which were negative by cytotoxicity test. However, in post-transplant samples, floweytometry was found to be a more objective and useful test than cytotoxicity testing in distinguishing 6 out of 7 mild acute-graft-rejection episodes. Both tests were

found to be negative in alt 5 cases of cyclosporin-A nephrotoxicity, 7 cases of acute tubular necrosis and 10 out of 11 cases of chronic rejection.

DOI: 10.1016/S0377-1237(17)30824-9

PMCID: PMC5530271

PMID: 28769326

26: Choudhary SK, Abraham A, Bhoje A, Gharde P, Sahu M, Talwar S, Airan B. Transaortic edge-to-edge mitral valve repair for moderate secondary/functional mitral regurgitation in patients undergoing aortic root/valve intervention. *J Thorac Cardiovasc Surg.* 2017 Nov;154(5):1624-1629. doi: 10.1016/j.jtcvs.2017.06.013. Epub 2017 Jun 13. PubMed PMID: 28676179.

OBJECTIVE: The present study evaluates the feasibility, safety, and efficacy of edge-to-edge repair for moderate secondary/functional mitral regurgitation in patients undergoing aortic valve/root interventions.

METHODS: Sixteen patients underwent transaortic edge-to-edge mitral valve repair. Mitral regurgitation was 2+ in 8 patients and 3+ in 6 patients. Two patients in whom cardiac arrest developed preoperatively had severe (4+) mitral regurgitation. Patients underwent operation for severe aortic regurgitation ± aortic root lesions. The mean left ventricular systolic and diastolic diameters were 51.5 ± 12.8 mm and 70.7 ± 10.7 mm, respectively. Left ventricular ejection fraction ranged from 20% to 60%. Primary surgical procedure included Bentall's ± hemiarch replacement in 10 patients, aortic valve replacement in 5 patients, and noncoronary sinus replacement with aortic valve repair in 1 patient.

RESULTS: Severity of mitral regurgitation decreased to trivial or zero in 13 patients, 1+ in 2 patients, and 2+ in 1 patient. There were no gradients across the mitral valve in 9 patients, less than 5 mm Hg in 6 patients, and 9 mm Hg in 1 patient. There was no operative mortality. Follow-up ranged from 2 weeks to 54 months. Echocardiography showed trivial or no mitral regurgitation in 12 patients, 1+ in 2 patients, and 2+ in 2 patients. None of the patients had significant mitral stenosis. The mean left ventricular systolic and diastolic diameters decreased to 40.5 ± 10.3 mm and 58.7 ± 11.6 mm, respectively. Ejection fraction also improved slightly (22%-65%).

CONCLUSIONS: Transaortic edge-to-edge mitral valve repair is a safe and effective technique to abolish secondary/functional mitral regurgitation. However, its impact on overall survival needs to be studied.

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PMID: 28676179

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The Wnt/ β -catenin is a highly conserved signaling pathway involved in cell fate decisions during various stages of development. Dysregulation of canonical Wnt/ β -catenin signaling has been associated with various diseases including cancer. β -Catenin, the central component of canonical Wnt signaling pathway, is a

multi-functional protein playing both structural and signaling roles. β -Catenin is composed of three distinct domains: N-terminal domain, C-terminal domain and a central armadillo repeat domain. N-terminal domain of β -catenin harbours almost all of the cancer causing mutations, thus deciphering its critical structural and functional roles offers great potential in cancer detection and therapy. Here, in this review, we have collected information from pharmacological analysis, bio-physical and structural studies, molecular modeling, in-vivo and in-vitro assays, and transgenic animal experiments employing various N-terminal domain variants of β -catenin to discuss the interaction of β -catenin with its binding partners that specifically interact with this domain and the implications of these interactions on signaling, cell fate determination, and in tumorigenesis. A thorough understanding of interactions between β -catenin and its binding partners will enable us to more effectively understand how β -catenin switches between its multiple roles, and will lead to the development of specific assays for the identification of small molecules as chemotherapeutic agents to treat diseases, including cancer and neurological disorders, where Wnt/ β -catenin signaling is dysregulated.

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PMID: 28927523 [Indexed for MEDLINE]

29: Das A, Bhalla AS, Sharma R, Kumar A, Thakar A, Vishnubhatla SM, Sharma MC, Sharma SC. Can Diffusion Weighted Imaging Aid in Differentiating Benign from Malignant Sinonasal Masses?: A Useful Adjunct. *Pol J Radiol.* 2017 Jun 28;82:345-355. doi: 10.12659/PJR.900633. eCollection 2017. PubMed PMID: 28740564; PubMed Central PMCID: PMC5499628.

BACKGROUND: To evaluate the role of diffusion weighted imaging (DWI) and apparent diffusion coefficient (ADC) values at 3 Tesla in characterizing sinonasal masses. **MATERIAL/METHODS:** After ethical clearance, 79 treatment naive patients with head and neck masses underwent magnetic resonance imaging (MRI), including DWI at 3 Tesla using the following b values - 0, 500 and 1000 s/mm². Thirty-one patients were found to have sinonasal tumours and were subsequently analysed. Image analysis consisted of a morphological evaluation of conventional MR images, qualitative evaluation of DW trace images and quantitative assessment of mean ADC values. Receiver operating characteristic (ROC) curve was drawn to determine a cut-off ADC value for the differentiation between benign and malignant masses. **RESULTS:** Sinonasal masses showed an overlapping growth pattern on conventional imaging, irrespective of their biological nature. The mean ADC value of benign lesions was $1.948 \pm 0.459 \times 10^{-3}$ mm²/s, while that of malignant lesions was $1.046 \pm 0.711 \times 10^{-3}$ mm²/s, and the difference was statistically significant (p=0.004). When a cut-off ADC value of 1.791×10^{-3} mm²/s was used, sensitivity of 80% and specificity of 83.3% were obtained for characterization of malignant lesions, which was statistically significant. Juvenile nasopharyngeal angiofibroma (JNA) showed distinctly high ADC values, while meningioma was the only benign lesion with restricted diffusion. Atypical entities with unexpected diffusion characteristics included: adenocarcinoma, adenoid cystic carcinoma, meningioma, chondrosarcoma and fibromyxoid sarcoma. **CONCLUSIONS:** DWI in conjunction with conventional imaging can potentially enhance the diagnostic accuracy in characterizing sinonasal masses as benign or malignant. Some specific entities such as JNA and meningioma showed distinctive diffusion characteristics.

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PMCID: PMC5499628
PMID: 28740564

Conflict of interest statement: Conflict of interest Authors declares that there is no conflict of interest.

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INTRODUCTION: Central nervous system (CNS) involvement in acute lymphoblastic leukemia (ALL) is diagnosed traditionally by cytopathology (CP) of the cerebrospinal fluid (CSF). Role of flow cytometry (FC) to diagnose CNS involvement has not been extensively investigated.

METHODS: We aimed to detect CNS involvement in 42 ALL patients (33 B-ALL, nine T-ALL) at diagnosis by FC and comparing it with CP and to correlate it with known risk factors for CNS disease like Lactate dehydrogenase (LDH). A receiver operating characteristic curve was used to determine the cutoff of LDH to predict CSF involvement. For the analysis of categorical/quantitative variables, Fisher's exact test was used. For the analysis of continuous variables, Mann-Whitney test was used. A P value of <.05 was taken as significant.

RESULTS: CP and FC were positive in five (11.9%) and 11 patients (26.14%) respectively with FC detecting a significantly higher level of involvement (P=.001). All CP-positive cases were FC positive. A LDH value of >472 U/L had a sensitivity of 61% and specificity of 62.5% for diagnosis of CSF involvement by FC.

CONCLUSIONS: CSF FC detects CNS disease in ALL patients at diagnosis at a rate double than CP alone and is statistically associated with an elevated LDH level. It should be incorporated in the evaluation of CSF to detect CNS involvement.

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32: Dayal P, Balhara YPS. A naturalistic study of predictors of retention in treatment among emerging adults entering first buprenorphine maintenance treatment for opioid use disorders. *J Subst Abuse Treat*. 2017 Sep;80:1-5. doi: 10.1016/j.jsat.2017.06.004. Epub 2017 Jun 15. PubMed PMID: 28755768.

INTRODUCTION: Emerging adulthood (between the ages 18-25years) has been conceptualized as a specific developmental stage based on unique psychosocial characteristics. Opioids are commonly used drugs in this population. Few studies have reported predictors of retention in buprenorphine maintenance treatment among opioid-dependent emerging adults, particularly from India. Moreover, no study has examined outcomes with opioid maintenance treatment among emerging adults in non-clinical trial, naturalistic settings. The current study aimed to assess retention in buprenorphine maintenance treatment among emerging adults in a naturalistic setting. Also, it aimed to assess the factors associated with retention in treatment among these individuals.

METHODS: The current study was a retrospective cohort study conducted at a substance use disorder treatment centre in northern part of India. The patients who received buprenorphine maintenance treatment between 1st January 2012 and

31st December 2014 were eligible for inclusion in the current study. The follow-up data of these subjects were assessed up to and including 31st March 2015. Information was retrieved on socio-demographic variables. The information related to substance use included type of substance, duration of use, age of onset, motive of use, route of administration and source of procurement. Additionally, details of buprenorphine dose, dispensing pattern, induction settings were recorded. Cox regression analysis was carried out to assess the predictors of retention in buprenorphine maintenance treatment.

RESULTS: Of 68 emerging adults, 33.8% were retained in treatment at 90days, 19.1% at 6months and 11.7% at one year. After controlling for various covariates in adjusted Cox regression analysis, substance use in first degree relatives (AHR: 2.40, 95% CI 1.33-4.31), lower daily buprenorphine dose (AHR: 0.86, 95% CI 0.78-0.94) and past month injection drug use (AHR: 0.30, 95% CI 0.14-0.66) were found to be the significant predictors of treatment dropout.

CONCLUSIONS: The findings of the current study help understand the predictors of retention in buprenorphine maintenance treatment among emerging adults in a real-world situation. These findings will help guide formulation of responsive and relevant buprenorphine maintenance treatment program for the emerging adults.

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PMID: 28755768

33: Faruq M, Magaña JJ, Suroliya V, Narang A, Murillo-Melo NM, Hernández-Hernández O, Srivastava AK, Mukerji M. A Complete Association of an intronic SNP rs6798742 with Origin of Spinocerebellar Ataxia Type 7-CAG Expansion Loci in the Indian and Mexican Population. *Ann Hum Genet.* 2017 Sep;81(5):197-204. doi: 10.1111/ahg.12200. Epub 2017 Jun 9. PubMed PMID: 28597910.

Spinocerebellar ataxia type 7 (SCA7) is a rare neurogenetic disorder caused by highly unstable CAG repeat expansion mutation in coding region of SCA7. We aimed to understand the effect of diverse ATXN7 cis-element in correlation with CAG expansion mutation of SCA7. We initially performed an analysis to identify the haplotype background of CAG expanded alleles using eight bi-allelic single nucleotide polymorphisms (SNPs) flanking an ATXN7-CAG expansion in 32 individuals from nine unrelated Indian SCA7 families and 88 healthy controls. Subsequent validation of the findings was performed in 89 ATXN7-CAG mutation carriers and in 119 unrelated healthy controls of Mexican ancestry. The haplotype analyses showed a shared haplotype background and C allele of SNP rs6798742 (approximately 6 kb from the 3'-end of CAG repeats) is in complete association with expanded, pre-mutation, intermediate, and the majority of large normal (≥ 12) CAG allele. The C allele (ancestral/chimp allele) association was validated in SCA7 subjects and healthy controls from Mexico, suggesting its substantial association with CAG expanded and expansion-prone chromosomes. Analysis of rs6798742 and other neighboring functional SNPs within 6 kb in experimental datasets (Encyclopedia of DNA Elements; ENCODE) shows functional marks that could affect transcription as well as histone methylation. An allelic association of the CAG region to an intronic SNP in two different ethnic and geographical populations suggests a -cis factor-dependent mechanism in ATXN7 CAG-region expansion.

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DOI: 10.1111/ahg.12200

PMID: 28597910

34: Fowkes FG, Forster RB, Levin CE, Naidoo NG, Roy A, Shu C, Spertus J, Fang K, Bechara-Zamudio L, Catalano M, Vison A, Nikol S, Fletcher JP, Jaff MR, Hiatt WR,

Norgren L. Prioritization of treatments for lower extremity peripheral artery disease in low- and middle-income countries. *Int Angiol.* 2017 Jun;36(3):203-215. doi: 10.23736/S0392-9590.16.03716-0. Epub 2016 Jul 7. Review. PubMed PMID: 27386953.

INTRODUCTION: Lower extremity peripheral artery disease (PAD) is increasing in prevalence in low- and middle-income countries creating a large health care burden. Clinical management may require substantial resources but little consideration has been given to which treatments are appropriate for less advantaged countries.

EVIDENCE ACQUISITION: The aim of this review was to systematically appraise published data on the costs and effectiveness of PAD treatments used commonly in high-income countries, and for an international consensus panel to review that information and propose a hierarchy of treatments relevant to low- and middle-income countries.

EVIDENCE SYNTHESIS: Pharmacotherapy for intermittent claudication was found to be expensive and improve walking distance by a modest amount. Exercise and endovascular therapies were more effective and exercise the most cost-effective. For critical limb ischemia, bypass surgery and endovascular therapy, which are both resource intensive, resulted in similar rates of amputation-free survival. Substantial reductions in cardiovascular events occurred with use of low cost drugs (statins, ACE inhibitors, anti-platelets) and smoking cessation.

CONCLUSIONS: The panel concluded that, in low- and middle-income countries, cardiovascular prevention is a top priority, whereas a lower priority should be given to pharmacotherapy for leg symptoms and revascularisation, except in countries with established vascular units.

DOI: 10.23736/S0392-9590.16.03716-0
PMID: 27386953 [Indexed for MEDLINE]

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One-lung ventilation is required for various thoracic procedures. In addition, various strategies such as the use of double-lumen tube, uninvent tubes, and endobronchial blocker have been used for performing one-lung ventilation. Each of these techniques has its advantages and limitations. Certain factors for failure of endobronchial blocker to provide lung deflation has been described in literature. We report a different aetiology of failure of lung deflation, although the endobronchial blocker was appropriately placed.

DOI: 10.5152/TJAR.2017.60566
PMCID: PMC5512397
PMID: 28752009

Conflict of interest statement: Conflict of Interest: No conflict of interest was declared by the authors.

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Phenotypic characteristics are known to vary substantially among different ethnicities around the globe. These variations are mediated by number of stochastic events and cannot be attributed to genetic architecture alone. DNA methylation is a well-established mechanism that sculpts our epigenome influencing phenotypic variation including disease manifestation. Since DNA methylation is an important determinant for health issues of a population, it demands a thorough investigation of the natural differences in genome wide DNA methylation patterns across different ethnic groups. This study is based on comparative analyses of methylome from five different ethnicities with major focus on Indian subjects. The current study uses hierarchical clustering approaches, principal component analysis and locus specific differential methylation analysis on Illumina 450K methylation data to compare methylome of different ethnic subjects. Our data indicates that the variations in DNA methylation patterns of Indians are less among themselves compared to other global population. It empirically correlated with dietary, cultural and demographical divergences across different ethnic groups. Our work further suggests that Indians included in this study, despite their genetic similarity with the Caucasian population, are in close proximity with Japanese in terms of their methylation signatures.

DOI: 10.1007/s00438-017-1298-0

PMID: 28271161 [Indexed for MEDLINE]

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Ameloblastic carcinoma is a rare locally aggressive odontogenic neoplasm. These tumors are most commonly found to arise from mandible. Because of rarity, there is limited information about the clinical behaviour of such patients. We intended to perform this review of published literature to assess the demographic profile, pattern of care and assess survival outcomes. Two authors independently searched PubMed, Google search, and Cochrane library for eligible studies from 1950 until July 1 2016 published in English language. Data of 199 patients were retrieved from 94 publications for statistical analysis. Median age of the entire cohort was 49 years (range 7-91 years). The analysis revealed that a clear twofold higher incidence in male with male-to-female ratio was 2.4:1 (140:57). Mandible was found to be the commonest tumor location in 66.7% (n = 132) cases followed by maxilla (31.8%) (n = 64). The present analysis revealed that median PFS of 57 months (95% CI 39-120 months) with 5- and 10-year PFS was found to be 47.88

and 29.48%, respectively. Median OS for the entire cohort which was 122 months (95% CI 96-153 months) with 2- and 5-year OS for the entire cohort was 87.16 and 69.08%, respectively. In univariate analysis, patients with an R0 resection were found to have a favourable survival. In addition, patients with localized disease and younger age were found to have a better survival. Adjuvant radiation did not confer any survival advantage. The present analysis revealed excellent outcome for patients treated with an R0 resection. Older patients with high-risk factor may benefit from adjuvant radiation. Role of chemotherapy needs to be evaluated.

DOI: 10.1007/s00405-017-4631-7

PMID: 28600599

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Wilson disease is caused by the accumulation of copper in the liver, brain or other organs, due to the mutation in ATP7B gene, which encodes protein that helps in excretion of copper in the bile canaliculus. Clinical presentation varies from asymptomatic elevation of transaminases to cirrhosis with decompensation. Hepatocellular carcinoma is a known complication of cirrhosis, but a rare occurrence in Wilson disease. We present a case of neurological Wilson disease, who later developed decompensated cirrhosis and hepatocellular carcinoma.

DOI: 10.1016/j.jceh.2016.09.012

PMCID: PMC5478940 [Available on 2018-06-01]

PMID: 28663680

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The elongation or calcification of the stylohyoid ligament that leads to pressure symptoms, or entrapment of nearby glossopharyngeal nerve or carotid artery, is known as Eagle syndrome. A PubMed search leads to finding of rare fatality among the 49 reported cases. In the present case, the deceased was a 40-year-old male who choked on his food. We hypothesise that the impaction of food in the upper respiratory tract, as well as the inability to intubate the person, were both the result of the calcified stylohyoid ligament.

DOI: 10.1177/0025817217695139

PMID: 28508730

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Aug;69(4):432-433. doi: 10.1016/j.ihj.2017.05.015. Epub 2017 Jun 17. PubMed PMID: 28822506; PubMed Central PMCID: PMC5560877.

46: Gupta A, Bopanna S, Kedia S, Yadav DP, Goyal S, Jain S, Makharia G, Ahuja V. Familial aggregation of inflammatory bowel disease in patients with ulcerative colitis. *Intest Res.* 2017 Jul;15(3):388-394. doi: 10.5217/ir.2017.15.3.388. Epub 2017 Jun 12. PubMed PMID: 28670236; PubMed Central PMCID: PMC5478764.

BACKGROUND/AIMS: Familial occurrence of inflammatory bowel disease (IBD) is well documented. Reports from Western countries have shown a higher familial occurrence of ulcerative colitis (UC) in first- and second-degree relatives than that in the Asian UC population. No data are currently available from the Indian subcontinent in this regard. We present our data on the familial aggregation of UC.

METHODS: Records of patients with UC followed at the Inflammatory Bowel Disease Clinic at the All India Institute of Medical Sciences, New Delhi from August 2004 to January 2016 were reviewed. Details regarding the prevalence of family history and characteristics of these patients were recorded. Affected family members were contacted and disease characteristics were noted for assessment of familial aggregation.

RESULTS: Of the 2,058 UC patients included in the analysis, a positive family history of IBD was confirmed in 31 patients (1.5%), 24 (77.4%) of whom had only first-degree relatives affected. All the affected relatives had UC and none had Crohn's disease. Among first-degree relatives, siblings were found to have the highest prevalence of IBD (53.3%), followed by parents (26.7%).

CONCLUSIONS: The probability of occurrence of IBD in family members of affected North Indian UC patients is lower than that reported in Western populations.

DOI: 10.5217/ir.2017.15.3.388

PMCID: PMC5478764

PMID: 28670236

Conflict of interest statement: Conflict of interest: None.

47: Gupta A, Kapil U. Undernutrition Amongst Under-five Children Belonging to High Income Group Communities in India. *Indian Pediatr.* 2017 Aug 15;54(8):686-687. Epub 2017 Jun 4. PubMed PMID: 28607215.

According to RSOC (2013-2014) data, high prevalence of stunting (26.7%) and wasting (13.0%) exists amongst under-five children belonging to highest wealth index communities. India possibly cannot achieve the 2025 Global nutrition targets for reducing the rate of stunting and wasting amongst Under-five children, unless efforts are also directed towards this group.

PMID: 28607215

48: Gupta AK, Jana M. Lung Ultrasound in Childhood Pneumonia: The Emerging New Era. *Indian J Pediatr.* 2017 Jul;84(7):497-498. doi: 10.1007/s12098-017-2380-7. Epub 2017 Jun 2. Review. PubMed PMID: 28577201.

49: Gupta Jain S, Puri S, Misra A, Gulati S, Mani K. Effect of oral cinnamon intervention on metabolic profile and body composition of Asian Indians with metabolic syndrome: a randomized double-blind control trial. *Lipids Health Dis.* 2017 Jun 12;16(1):113. doi: 10.1186/s12944-017-0504-8. PubMed PMID: 28606084; PubMed Central PMCID: PMC5469078.

BACKGROUND: Nutritional modulation remains central to the management of metabolic syndrome. Intervention with cinnamon in individuals with metabolic syndrome remains sparsely researched.

METHODS: We investigated the effect of oral cinnamon consumption on body composition and metabolic parameters of Asian Indians with metabolic syndrome. In this 16-week double blind randomized control trial, 116 individuals with metabolic syndrome were randomized to two dietary intervention groups, cinnamon [6 capsules (3 g) daily] or wheat flour [6 capsules (2.5 g) daily]. Body composition, blood pressure and metabolic parameters were assessed.

RESULTS: Significantly greater decrease [difference between means, (95% CI)] in fasting blood glucose (mmol/L) [0.3 (0.2, 0.5) $p = 0.001$], glycosylated haemoglobin (mmol/mol) [2.6 (0.4, 4.9) $p = 0.023$], waist circumference (cm) [4.8 (1.9, 7.7) $p = 0.002$] and body mass index (kg/m²) [1.3 (0.9, 1.5) $p = 0.001$] was observed in the cinnamon group compared to placebo group. Other parameters which showed significantly greater improvement were: waist-hip ratio, blood pressure, serum total cholesterol, low-density lipoprotein cholesterol, serum triglycerides, and high-density lipoprotein cholesterol. Prevalence of defined metabolic syndrome was significantly reduced in the intervention group (34.5%) vs. the placebo group (5.2%).

CONCLUSION: A single supplement intervention with 3 g cinnamon for 16 weeks resulted in significant improvements in all components of metabolic syndrome in a sample of Asian Indians in north India.

TRIAL REGISTRATION: The clinical trial was retrospectively registered (after the recruitment of the participants) in ClinicalTrial.gov under the identification number: NCT02455778 on 25th May 2015.

DOI: 10.1186/s12944-017-0504-8

PMCID: PMC5469078

PMID: 28606084

50: Gupta S, Mallick S, Benson R, Haresh KP, Julka PK, Rath GK. Extent of surgical resection and adjuvant temozolomide improves survival in pediatric GBM: a single center experience. *Childs Nerv Syst.* 2017 Jun;33(6):951-956. doi: 10.1007/s00381-017-3381-6. Epub 2017 Apr 19. PubMed PMID: 28424876.

BACKGROUND: Pediatric glioblastoma (pGBM) is an uncommon entity. The importance of concurrent and adjuvant temozolomide is not known in this subset of patients.

METHODS: We retrospectively analyzed our database between 2000 and 2015. All patients were treated with maximally safe surgical resection. This was followed by a uniform treatment schedule of post-operative radiation with concurrent daily temozolomide at 75 mg/m². Radiation dose was 60 Gy in 30 fractions planned by 3-dimensional conformal radiotherapy. Concurrent and adjuvant temozolomide was used in all patients treated after 2007. Four weeks later, adjuvant temozolomide was started at 150 mg/m², day 1 to 5 every 28 days and escalated to 200 mg/m² from the second cycle onwards if well tolerated. Log-rank test was used to compare survival distribution. The data was analyzed using SPSS (version 16).

RESULTS: Fifty-one patients were analyzed. Median age was 14 years (range: 5 to 21 years). Thirty-five males and 16 females were noted. Median symptom duration was 4 months. Twenty-eight patients underwent a gross total resection (GTR) while 17 underwent a subtotal resection; six patients underwent decompression.

Thirty-three patients received concurrent chemotherapy while 27 received adjuvant chemotherapy. Median progression-free survival (PFS) was 15.1 months. One- and 3-year PFS was 54.4% and 3-year PFS was 24.6%. The median overall survival was 17.4 months. In univariate analysis survival was better for gross total resection (17.4 months vs. 11.5 months; $p = 0.037$), and significance maintained after multivariate analysis $p = 0.026$, HR 3.069, 95% CI 1.14-8.23. In univariate analysis, survival was better for patients receiving temozolomide but did not

achieve significance. However, in multivariate analysis, use of temozolomide was associated with significantly improved survival $p = 0.036$, HR 3.315, 95% CI 1.07-10.19.

CONCLUSIONS: GTR improves survival significantly in pGBM. Adjuvant temozolomide may improve survival in pGBM.

DOI: 10.1007/s00381-017-3381-6

PMID: 28424876

51: Halder A, Kumar P, Jain M, Kalsi AK. Genomics: Tool to predict and prevent male infertility. *Front Biosci (Schol Ed)*. 2017 Jun 1;9:448-508. Review. PubMed PMID: 28410128.

A large number of human diseases arise as a result of genetic abnormalities. With the advent of improved molecular biology techniques, the genetic etiology of male infertility is increasing. The common genetic factors responsible for male infertility are chromosomal abnormalities, Yq microdeletion and cystic fibrosis. These are responsible for approximately 30 percent cases of male infertility. About 40 percent cases of male infertility are categorized as idiopathic. These cases may be associated with genetic and genomic abnormalities. During last few years more and more genes are implicated in male infertility leading to decline in prevalence of idiopathic etiology. In this review we will summarize up to date published works on genetic etiologies of male infertility including our own works. We also briefly describe reproductive technologies used to overcome male infertility, dangers of transmitting genetic disorders to offspring and ways to prevent transmission of genetic disorders during assisted reproduction. At the end we will provide our points on how genomic information can be utilized for prediction and prevention of male infertility in coming years.

PMID: 28410128 [Indexed for MEDLINE]

52: Harivenkatesh N, Kumar L, Bakhshi S, Sharma A, Kabra M, Velpandian T, Gogia A, Shastri SS, Biswas NR, Gupta YK. Influence of MDR1 and CYP3A5 genetic polymorphisms on trough levels and therapeutic response of imatinib in newly diagnosed patients with chronic myeloid leukemia. *Pharmacol Res*. 2017 Jun;120:138-145. doi: 10.1016/j.phrs.2017.03.011. Epub 2017 Mar 19. PubMed PMID: 28330783.

Polymorphisms in genes coding for imatinib transporters and metabolizing enzymes may affect imatinib pharmacokinetics and clinical response. Aim of this study was to assess the influence of polymorphisms in MDR1 and CYP3A5 genes on imatinib trough levels, cytogenetic and molecular response in patients with CML. Newly diagnosed patients with chronic-phase CML started on imatinib therapy were enrolled and followed up prospectively for 24 months. The following single nucleotide polymorphisms were genotyped; C1236T, C3435T, G2677T/A in MDR1 gene and A6986G in CYP3A5 gene. Genotyping was done using PCR-RFLP method and validated by direct gene sequencing. Trough levels of imatinib were measured using LC-MS/MS. Cytogenetic response was assessed by conventional bone-marrow cytogenetics. Molecular response was assessed by qRT-PCR using international scale. A total of 173 patients were included, out of which 71 patients were imatinib responders, while 102 were non-responders. Marked inter-individual variability in trough levels of imatinib was seen. Patients with GG genotype for CYP3A5-A6986G ($P=0.016$) and TT genotype for MDR1-C3435T ($P=0.013$) polymorphisms had significantly higher trough levels of imatinib. Patients with AA genotype for CYP3A5-A6986G [RR=1.448, 95% CI (1.126, 1.860), $P=0.029$] and CC genotype for MDR1-C1236T [RR=1.397, 95% CI (1.066, 1.831), $P=0.06$] & MDR1-C3435T [RR=1.508, 95% CI (1.186, 1.917), $P=0.018$] polymorphisms were at high risk for failure of

imatinib therapy. Patients with CGC haplotype for MDR1 polymorphisms had significantly lower imatinib trough levels and were at a higher risk of imatinib failure [RR=1.547, 95% CI (1.324, 1.808), P<0.001]. GG vs. non-GG genotype for CYP3A5-A6986G [adjusted OR: 0.246; 95% CI (0.116, 0.519); P<0.001] and TT vs. non-TT genotype for MDR1-C1236T [adjusted OR: 0.270; 95% CI (0.110, 0.659); P=0.004] & MDR1-C3435T [adjusted OR: 0.289; 95% CI (0.135, 0.615); P=0.001] polymorphisms were independent factors predicting imatinib response in multivariate analysis. To conclude, MDR1 and CYP3A5 genetic polymorphisms significantly influence plasma trough levels and therapeutic response of imatinib in patients with CML. Genotyping of these polymorphisms could be of value to individualize the therapy and optimize the clinical outcomes.

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PMID: 28330783

53: Honnekeri BS, Goel A, Umate M, Shah N, De Sousa A. Social anxiety and Internet socialization in Indian undergraduate students: An exploratory study. *Asian J Psychiatr.* 2017 Jun;27:115-120. doi: 10.1016/j.ajp.2017.02.021. Epub 2017 Mar 2. PubMed PMID: 28558881.

BACKGROUND: Social Anxiety Disorder (SAD) is a globally prevalent, chronic, debilitating psychiatric disorder affecting youth. With comorbidities including major depression, substance abuse, lower educational and work attainment, and increased suicide risk, it has a significant public health burden. The objective of this study was to estimate the prevalence of SAD in urban Indian undergraduate students and to study their Facebook (FB) usage patterns.

METHODS: In this exploratory cross-sectional study, 316 undergraduate students were screened for social anxiety using validated instruments, Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS), and divided into two groups based on scores obtained. The groups were then compared with regards to behaviors and attitudes toward Facebook, obtained from a self-report questionnaire.

RESULTS: SAD was estimated to be a significant, prevalent (7.8%) disorder in otherwise productive youth, and showed female preponderance. Higher specific social phobia scores were associated with the inability to reduce Facebook use, urges toward increasing use, spending more time thinking about Facebook, negative reactions to restricting use, and using it to forget one's problems.

CONCLUSIONS: SAD was estimated to have a prevalence of 7.8% in our study, and was associated with stronger FB usage attitudes and patterns. We recommend that the relationship between social anxiety and Internet use be explored further, to study the possibility of Internet-based screening and intervention strategies having wider reach and appeal in socially anxious individuals.

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PMID: 28558881

54: Immanuel C, Ramanathan A, Balasubramaniyan M, Khatri VK, Amdare NP, Rao DN, Reddy MVR, Perumal K. Immunoprophylaxis of multi-antigen peptide (MAP) vaccine for human lymphatic filariasis. *Immunol Res.* 2017 Jun;65(3):729-738. doi: 10.1007/s12026-017-8911-5. PubMed PMID: 28432603.

Human lymphatic filariasis, the parasitic disease caused by the filarial nematodes *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*, is ranked as the second most complex clinical condition leading to permanent and long-term disability. The multiple antigen peptide (MAP) approach is an effective method to

chemically synthesize and deliver multiple T and B cell epitopes as the constituents of a single immunogen. Here, we report on the design, chemical synthesis, and immunoprophylaxis of three epitopes that have been identified from promising vaccine candidates reported in our previous studies, constructed as MAP on an inert lysine core for human lymphatic filariasis in Jird model. Two epitopes from Thioredoxin and one epitope from Transglutaminase were constructed as MAP in an inert lysine core. The immunoprophylaxis of the synthetic vaccine construct studied in Jird models showed protective antibody (1 in 64,000 titer) and cellular immune response. Thioredoxin-Transglutaminase MAP (TT MAP) conferred a significantly high protection of 63.04% compared to control (8.5%). Multi-antigen peptide vaccine is one best approach to provide immunity against multiple antigens delivered by the complex filarial parasite.

DOI: 10.1007/s12026-017-8911-5

PMID: 28432603

55: Irshad K, Jyotsna VP, Agarwal S, Chosdol K, Pal S, Deepak RK. T372R Mutation Status in Yin Yang 1 Gene in Insulinoma Patients. *Horm Metab Res.* 2017 Jun;49(6):452-456. doi: 10.1055/s-0043-107244. Epub 2017 May 4. PubMed PMID: 28472826.

Insulinomas are rare pancreatic neuroendocrine tumors. The genetic causes underlying insulinoma are still being investigated. Recently, 3 independent studies reported a recurrent somatic mutation in YY1 gene (C>G; Thr372Arg) among insulinoma patients belonging to Chinese and Western Caucasian populations, which was found to increase insulin secretion by β -cells. However, the status of this key gene variation remains unknown in patients of other ethnicities. We, therefore, screened Indian sporadic insulinoma patients for YY1 T372R mutation in the present study. Seventeen patients diagnosed with insulinoma were recruited retrospectively and their records of family history and clinical parameters were collected. Formalin-fixed paraffin-embedded tumor tissues were used to extract genomic DNA, which was subjected to PCR amplification of YY1 exon 5, followed by Sanger sequencing. Nucleotide sequences thus obtained were aligned against the documented sequence of YY1 exon 5. We found absence of C to G mutation at YY1 codon 372 in all 17 (100%) insulinoma tissues analyzed. On comparison with the mutation frequency observed in the Chinese patients, our results point to genetic heterogeneity in the pathogenesis of insulinoma. This is the first report on the status of YY1 T372R in insulinoma cases of Indian origin. This also warrants analysis of other documented as well as novel mutations in genes in insulinoma tumorigenesis.

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PMID: 28472826

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56: Jagannathan NR, Sharma U. Breast Tissue Metabolism by Magnetic Resonance Spectroscopy. *Metabolites.* 2017 Jun 7;7(2). pii: E25. doi: 10.3390/metabo7020025. Review. PubMed PMID: 28590405; PubMed Central PMCID: PMC5487996.

Metabolic alterations are known to occur with oncogenesis and tumor progression. During malignant transformation, the metabolism of cells and tissues is altered. Cancer metabolism can be studied using advanced technologies that detect both metabolites and metabolic activities. Identification, characterization, and quantification of metabolites (metabolomics) are important for metabolic analysis

and are usually done by nuclear magnetic resonance (NMR) or by mass spectrometry. In contrast to the magnetic resonance imaging that is used to monitor the tumor morphology during progression of the disease and during therapy, *in vivo* NMR spectroscopy is used to study and monitor tumor metabolism of cells/tissues by detection of various biochemicals or metabolites involved in various metabolic pathways. Several *in vivo*, *in vitro* and *ex vivo* NMR studies using ^1H and ^{31}P magnetic resonance spectroscopy (MRS) nuclei have documented increased levels of total choline containing compounds, phosphomonoesters and phosphodiester in human breast cancer tissues, which is indicative of altered choline and phospholipid metabolism. These levels get reversed with successful treatment. Another method that increases the sensitivity of substrate detection by using nuclear spin hyperpolarization of ^{13}C -labeled substrates by dynamic nuclear polarization has revived a great interest in the study of cancer metabolism. This review discusses breast tissue metabolism studied by various NMR/MRS methods.

DOI: 10.3390/metabo7020025

PMCID: PMC5487996

PMID: 28590405

Conflict of interest statement: The authors declare no conflict of interest.

57: Jain D, Ghosh S, Teixeira L, Mukhopadhyay S. Pathology of pulmonary tuberculosis and non-tuberculous mycobacterial lung disease: Facts, misconceptions, and practical tips for pathologists. *Semin Diagn Pathol.* 2017 Jun 7. pii: S0740-2570(17)30087-4. doi: 10.1053/j.semdp.2017.06.003. [Epub ahead of print] Review. PubMed PMID: 28693908.

Most pathologists are familiar with the microscopic features of tuberculosis and the need to examine special stains for acid-fast bacteria (AFB) in cases of granulomatous lung disease. However, misconceptions do exist, including the concept that finding AFB in "caseating granulomas" confirms the diagnosis of tuberculosis. This dogma is attributable to the high prevalence of tuberculosis in many countries, as well as unfamiliarity with the microscopic spectrum of non-tuberculous mycobacterial lung disease. This review aims to provide surgical pathologists with practical tips to identify AFB, illustrate the histologic overlap between pulmonary tuberculosis and non-tuberculous mycobacterial lung disease, and highlight the importance of cultures in this setting. M. tuberculosis and non-tuberculous mycobacteria cannot be reliably differentiated either on the basis of the tissue reaction or by bacterial morphology on acid-fast stains. Although a presumptive clinical diagnosis of tuberculosis can be made without culture-confirmation, the only definitive means to determine the true identity of AFB is by cultures or molecular methods. Making this distinction is most critical when AFB are found in incidentally detected lung nodules in geographic locations where the incidence of tuberculosis is low, because in such settings AFB in necrotizing granulomas of the lung are more likely to be non-tuberculous mycobacteria than M. tuberculosis.

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DOI: 10.1053/j.semdp.2017.06.003

PMID: 28693908

58: Jain S, Sharma SK. Challenges & options in dengue prevention & control: A perspective from the 2015 outbreak. *Indian J Med Res.* 2017 Jun;145(6):718-721. doi: 10.4103/ijmr.IJMR_1325_16. PubMed PMID: 29067972; PubMed Central PMCID: PMC5674540.

59: Kachhawa G, Kriplani A. Management of Reproductive Tract Anomalies. *J Obstet Gynaecol India*. 2017 Jun;67(3):162-167. doi: 10.1007/s13224-017-1001-8. Epub 2017 May 2. PubMed PMID: 28546661; PubMed Central PMCID: PMC5425643.

Reproductive tract malformations are rare in general population but are commonly encountered in women with infertility and recurrent pregnancy loss. Obstructive anomalies present around menarche causing extreme pain and adversely affecting the life of the young women. The clinical signs, symptoms and reproductive problems depend on the anatomic distortions, which may range from congenital absence of the vagina to complex defects in the lateral and vertical fusion of the Müllerian duct system. Identification of symptoms and timely diagnosis are an important key to the management of these defects. Although MRI being gold standard in delineating uterine anatomy, recent advances in imaging technology, specifically 3-dimensional ultrasound, achieve accurate diagnosis. Surgical management depend on the type of anomaly, its complexity and the proper embryological interpretation of the anomaly and involves multiple specialties; thus, patients should be referred to centres with experience in the treatment of complex genital malformations.

DOI: 10.1007/s13224-017-1001-8
PMCID: PMC5425643 [Available on 2018-06-01]
PMID: 28546661

60: Kalra A, Bhatt DL, Rajagopalan S, Suri K, Mishra S, Iqbal R, Virani SS. Overview of Coronary Heart Disease Risk Initiatives in South Asia. *Curr Atheroscler Rep*. 2017 Jun;19(6):25. doi: 10.1007/s11883-017-0662-1. Review. PubMed PMID: 28417301.

PURPOSE OF REVIEW: Cardiovascular disease (CVD) is now the leading cause of morbidity and mortality worldwide. Industrialization and economic growth have led to an unprecedented increment in the burden of CVD and their risk factors in less industrialized regions of the world. While there are abundant data on CVD and their risk factors from longitudinal cohort studies done in the West, good-quality data from South Asia are lacking.

RECENT FINDINGS: Several multi-institutional, observational, prospective registries, and epidemiologic cohorts in South Asia have been established to systematically evaluate the burden of CVD and their risk factors. The PINNACLE (Practice Innovation and Clinical Excellence) India Quality Improvement Program (PIQIP), the Kerala Acute Coronary Syndrome (ACS), and Trivandrum Heart Failure registries have focused on secondary prevention of CVD and performance measurement in both outpatient and inpatient settings, respectively. The Prospective Urban and Rural Epidemiology (PURE), Centre for Cardiometabolic Risk Reduction in South Asia (CARRS), and other epidemiologic and genetic studies have focused on primary prevention of CVD and evaluated variables such as environment, smoking, physical activity, health systems, food and nutrition policy, dietary consumption patterns, socioeconomic factors, and healthy neighborhoods. The international cardiovascular disease community has been responsive to a burgeoning cardiovascular disease burden in South Asia. Several collaborations have formed between the West (North America in particular) and South Asia to catalyze evidence-based and data-driven changes in the federal health policy in this part of the world to promote cardiovascular health and mitigate cardiovascular risk.

DOI: 10.1007/s11883-017-0662-1
PMID: 28417301 [Indexed for MEDLINE]

61: Kalra S, Gupta Y. Blood donation by persons with diabetes. *Diabet Med*. 2017 Jun;34(6):865-866. doi: 10.1111/dme.13308. PubMed PMID: 27990694.

62: Kandwal P, Vijayaraghavan GP, Nagaraja UB, Jayaswal A. Severe Rigid Scoliosis: Review of Management Strategies and Role of Spinal Osteotomies. *Asian Spine J.* 2017 Jun;11(3):494-503. doi: 10.4184/asj.2017.11.3.494. Epub 2017 Jun 15. Review. PubMed PMID: 28670419; PubMed Central PMCID: PMC5481606.

Severe rigid curves pose a considerable challenge to the treating spine surgeon. In our practice, approximately 30%-40% of patients with scoliosis present late with severe rigid scoliosis (>90° and <30% correction on bending films). Controversy still exists with regard to the ideal surgical strategy for correcting these rigid curves. Rigid scoliosis often presents in the form of either sharp angular or rounded deformities. Rounded deformities can be effectively managed with an anterior release to loosen the apex and posterior instrumentation (with osteotomies, if required). In contrast, severe rigid scoliosis, which is a sharp angular deformity, is not very amenable to anterior release and is best managed by posterior-only vertebral column resection and posterior instrumentation.

DOI: 10.4184/asj.2017.11.3.494

PMCID: PMC5481606

PMID: 28670419

Conflict of interest statement: Conflict of Interest: No potential conflict of interest relevant to this article was reported.

63: Karwasra R, Kalra P, Nag TC, Gupta YK, Singh S, Panwar A. Corrigendum to "Safety assessment and attenuation of cisplatin induced nephrotoxicity by tuberous roots of *Boerhaavia diffusa*" [Regul. Toxicol. and Pharmacol. 81 (2016) 341-352]. *Regul Toxicol Pharmacol.* 2017 Aug;88:367-368. doi: 10.1016/j.yrtph.2017.05.020. Epub 2017 Jun 5. PubMed PMID: 28592367.

64: Global Burden of Disease Child and Adolescent Health Collaboration, Kassebaum N, Kyu HH, Zoeckler L, Olsen HE, Thomas K, Pinho C, Bhutta ZA, Dandona L, Ferrari A, Ghiwot TT, Hay SI, Kinfu Y, Liang X, Lopez A, Malta DC, Mokdad AH, Naghavi M, Patton GC, Salomon J, Sartorius B, Topor-Madry R, Vollset SE, Werdecker A, Whiteford HA, Abate KH, Abbas K, Damtew SA, Ahmed MB, Akseer N, Al-Raddadi R, Alemayohu MA, Altirkawi K, Abajobir AA, Amare AT, Antonio CAT, Arnlov J, Artaman A, Asayesh H, Avokpaho EFGA, Awasthi A, Ayala Quintanilla BP, Bacha U, Betsu BD, Barac A, Bärnighausen TW, Baye E, Bedi N, Bensenor IM, Berhane A, Bernabe E, Bernal OA, Beyene AS, Biadgilign S, Bikbov B, Boyce CA, Brazinova A, Hailu GB, Carter A, Castañeda-Orjuela CA, Catalá-López F, Charlson FJ, Chittheer AA, Choi JJ, Ciobanu LG, Crump J, Dandona R, Dellavalle RP, Deribew A, deVeber G, Dicker D, Ding EL, Dubey M, Endries AY, Erskine HE, Faraon EJA, Faro A, Farzadfar F, Fernandes JC, Fijabi DO, Fitzmaurice C, Fleming TD, Flor LS, Foreman KJ, Franklin RC, Fraser MS, Frostad JJ, Fullman N, Gebregers GB, Gebru AA, Geleijnse JM, Gibney KB, Gidey Yihdego M, Ginawi IAM, Gishu MD, Gizachew TA, Glaser E, Gold AL, Goldberg E, Gona P, Goto A, Gugnani HC, Jiang G, Gupta R, Tesfay FH, Hankey GJ, Havmoeller R, Hijar M, Horino M, Hosgood HD, Hu G, Jacobsen KH, Jakovljevic MB, Jayaraman SP, Jha V, Jibat T, Johnson CO, Jonas J, Kasaeian A, Kawakami N, Keiyoro PN, Khalil I, Khang YH, Khubchandani J, Ahmad Kiadaliri AA, Kieling C, Kim D, Kissoon N, Knibbs LD, Koyanagi A, Krohn KJ, Kuate Defo B, Kucuk Bicer B, Kulikoff R, Kumar GA, Lal DK, Lam HY, Larson HJ, Larsson A, Laryea DO, Leung J, Lim SS, Lo LT, Lo WD, Looker KJ, Lotufo PA, Magdy Abd El Razek H, Malekzadeh R, Markos Shifti D, Mazidi M, Meaney PA, Meles KG, Memiah P, Mendoza W, Abera Mengistie M, Mengistu GW, Mensah GA, Miller TR, Mock C, Mohammadi A, Mohammed S, Monasta L, Mueller U, Nagata C, Naheed A, Nguyen G, Nguyen QL, Nsoesie E, Oh IH, Okoro A, Olusanya JO, Olusanya BO, Ortiz A, Paudel D, Pereira DM, Perico N,

Petzold M, Phillips MR, Polanczyk GV, Pourmalek F, Qorbani M, Rafay A, Rahimi-Movaghar V, Rahman M, Rai RK, Ram U, Rankin Z, Remuzzi G, Renzaho AMN, Roba HS, Rojas-Rueda D, Ronfani L, Sagar R, Sanabria JR, Kedir Mohammed MS, Santos IS, Satpathy M, Sawhney M, Schättker B, Schwebel DC, Scott JG, Sepanlou SG, Shaheen A, Shaikh MA, She J, Shiri R, Shiue I, Sigfusdottir ID, Singh J, Silpakit N, Smith A, Sreeramareddy C, Stanaway JD, Stein DJ, Steiner C, Sufiyan MB, Swaminathan S, Tabaràs-Seisdedos R, Tabb KM, Tadese F, Tavakkoli M, Taye B, Teeple S, Tegegne TK, Temam Shifa G, Terkawi AS, Thomas B, Thomson AJ, Tobe-Gai R, Tonelli M, Tran BX, Troeger C, Ukwaja KN, Uthman O, Vasankari T, Venketasubramanian N, Vlassov VV, Weiderpass E, Weintraub R, Gebrehiwot SW, Westerman R, Williams HC, Wolfe CDA, Woodbrook R, Yano Y, Yonemoto N, Yoon SJ, Younis MZ, Yu C, Zaki MES, Zegeye EA, Zuhlke LJ, Murray CJL, Vos T. Child and Adolescent Health From 1990 to 2015: Findings From the Global Burden of Diseases, Injuries, and Risk Factors 2015 Study. *JAMA Pediatr.* 2017 Jun 1;171(6):573-592. doi: 10.1001/jamapediatrics.2017.0250. PubMed PMID: 28384795; PubMed Central PMCID: PMC5540012.

Importance: Comprehensive and timely monitoring of disease burden in all age groups, including children and adolescents, is essential for improving population health.

Objective: To quantify and describe levels and trends of mortality and nonfatal health outcomes among children and adolescents from 1990 to 2015 to provide a framework for policy discussion.

Evidence Review: Cause-specific mortality and nonfatal health outcomes were analyzed for 195 countries and territories by age group, sex, and year from 1990 to 2015 using standardized approaches for data processing and statistical modeling, with subsequent analysis of the findings to describe levels and trends across geography and time among children and adolescents 19 years or younger. A composite indicator of income, education, and fertility was developed (Socio-demographic Index [SDI]) for each geographic unit and year, which evaluates the historical association between SDI and health loss.

Findings: Global child and adolescent mortality decreased from 14.18 million (95% uncertainty interval [UI], 14.09 million to 14.28 million) deaths in 1990 to 7.26 million (95% UI, 7.14 million to 7.39 million) deaths in 2015, but progress has been unevenly distributed. Countries with a lower SDI had a larger proportion of mortality burden (75%) in 2015 than was the case in 1990 (61%). Most deaths in 2015 occurred in South Asia and sub-Saharan Africa. Global trends were driven by reductions in mortality owing to infectious, nutritional, and neonatal disorders, which in the aggregate led to a relative increase in the importance of noncommunicable diseases and injuries in explaining global disease burden. The absolute burden of disability in children and adolescents increased 4.3% (95% UI, 3.1%-5.6%) from 1990 to 2015, with much of the increase owing to population growth and improved survival for children and adolescents to older ages. Other than infectious conditions, many top causes of disability are associated with long-term sequelae of conditions present at birth (eg, neonatal disorders, congenital birth defects, and hemoglobinopathies) and complications of a variety of infections and nutritional deficiencies. Anemia, developmental intellectual disability, hearing loss, epilepsy, and vision loss are important contributors to childhood disability that can arise from multiple causes. Maternal and reproductive health remains a key cause of disease burden in adolescent females, especially in lower-SDI countries. In low-SDI countries, mortality is the primary driver of health loss for children and adolescents, whereas disability predominates in higher-SDI locations; the specific pattern of epidemiological transition varies across diseases and injuries.

Conclusions and Relevance: Consistent international attention and investment have led to sustained improvements in causes of health loss among children and adolescents in many countries, although progress has been uneven. The persistence of infectious diseases in some countries, coupled with ongoing epidemiologic

transition to injuries and noncommunicable diseases, require all countries to carefully evaluate and implement appropriate strategies to maximize the health of their children and adolescents and for the international community to carefully consider which elements of child and adolescent health should be monitored.

DOI: 10.1001/jamapediatrics.2017.0250
PMCID: PMC5540012 [Available on 2018-06-05]
PMID: 28384795 [Indexed for MEDLINE]

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BACKGROUND: Inflammation remains a crucial factor for progression of cardiac diseases and cardiac hypertrophy remains an important cause of cardiac failure over all age groups. As a key regulator of inflammation, toll-like receptor 4 (TLR4) plays an important role in pathogenesis of cardiac diseases. Being an important regulator of innate immunity, the precise pathway of TLR4-mediated cardiac complications is yet to be established. Therefore, the primary objective of the present study was to find the role of TLR4 in cardiac hypertrophy and the molecular mechanism thereof.

METHODS: Cardiac hypertrophy was induced with administration of isoproterenol (5mg/kg/day, sc). TLR4 receptor inhibitor RS-LPS (lipopolysaccharide from the photosynthetic bacterium *Rhodobacter sphaeroides*; 5µg/day) and agonist lipopolysaccharide (LPS) (from *Escherichia coli*; 3.12µg/day) were administered through osmotic pump along with isoproterenol. Cardiac hypertrophy as well as oxidative stress and mitochondrial parameters were evaluated.

RESULTS: Cardiac hypertrophy was confirmed with increased heart weight/body weight ratio as well as assessment of hypertrophic markers in heart. There was a marked increase in the TLR4 expression and oxidative stress along with mitochondrial dysfunction in ISO group. TLR4 inhibition significantly decreased heart weight/body weight ratio and ANP, collagen, and β -MHC expression and restored the disturbed cellular antioxidant flux. The mitochondrial perturbations that were observed in hypertrophy heart was normalized after administration of TLR4 inhibitor but not with the agonist. TLR4 agonism further exaggerated the oxidative stress in heart and hence accelerated the disease development and progression.

CONCLUSION: Our data show that increased TLR4 ligand pool in cardiac hypertrophy may exaggerate the disease progression. However, inhibition of TLR4 attenuated cardiac hypertrophy through reduced cardiac redox imbalance and mitochondrial dysfunction.

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PMCID: PMC5479928
PMID: 28690610

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OBJECTIVES: To identify the prevalence and correlates of bipolar I patients with a lifetime history of suicide attempt.

MATERIALS AND METHODS: Bipolar I disorder was diagnosed in 150 patients as per

DSM-IV-TR criteria. Their lifetime suicide risk was assessed using the Columbia Suicide Severity Rating Scale. NIMH retrospective Life Chart Methodology was used to chart the illness course. Medication Adherence Rating Scale (MARS) and Pittsburgh Sleep Quality Index (PSQI) were used to assess the recent adherence and subjective sleep quality, respectively. The suicide attempters were compared with non-attempters on individual variables.

RESULTS: Around 23% had a positive lifetime history of suicide attempt. They were predominantly female, had an index (first ever) episode of depression, spent more proportion of time being ill, especially in depressive or mixed episode phase. Comorbid substance use disorder along with suicidal attempts was seen only in males. Suicide attempters displayed poor medication adherence attitudes for medications taken during the past week and reported impaired sleep quality for the previous month.

CONCLUSIONS: A positive history of lifetime suicide attempt was significantly associated with a worse course of bipolar I disorder. Effective treatment of depressive episodes, addressing non-adherence, substance use and sleep problems can reduce the suicide risk in such patients. Retrospective design of the study and recall bias are some of the limitations.

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PMID: 27854557

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Estimation of total number of neurons in the spiral ganglion (SG) at various ages and their functional status is important as these neurons are constantly exposed to noise and other environmental factors that may lead to neuronal loss with aging due to excitotoxic damage. Parvalbumin (PV) is a calcium-binding protein (CBP), found in highly metabolically active neurons. It helps in buffering cytosolic calcium, which is essential for neurotransmitter release. The neurons in the adult human SG express PV more strongly than other CBPs like calbindin and calretinin. These CBPs can be used as signatures to recognise neurons. In the present study, we quantified the number of neurons expressing PV by unbiased stereology and compared it to the number of neurons stained by cresyl violet (CV), which is a Nissl stain, in the adult human SG. Five adult human cadaveric temporal bones were obtained from the forensic science mortuary, after due clearance from the institute ethics committee. Independent CV stained and PV immunostained sections were used to estimate the total number of neurons (optical fractionator), with StereoInvestigator (SI) software. The estimated total number of SG neurons was $27,485 \pm 3251$ and $26,705 \pm 1823$ in the PV and CV stained sections, respectively. There was no significant difference between the estimates ($p=0.552$). Therefore, CV staining is simpler and more cost effective when estimating neuronal number. Although PV stains spiral ganglion neurons (SGNs) with a greater intensity and provides a functional status, its tedious protocol limits its use for quantification.

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PMID: 28648968

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10.1007/s00268-017-3906-x. PubMed PMID: 28160027.

BACKGROUND: Core needle biopsy is replacing fine-needle aspiration cytology (FNAC) as the modality of choice for breast cancer diagnosis. This study was carried out to determine the usefulness of FNAC in breast cancer patients in a tertiary care center in North India.

METHODS: Case files of patients managed in the breast cancer clinic of a single surgical unit between 1993 and 2014 were reviewed. All patients who underwent FNAC at our institute or had their slides reviewed at our institute were included in the study. Patients operated on outside our center and those with FNAC reports which were not available for review were excluded. Data were entered in Microsoft Excel and analyzed with SPSS version 21. True positives and false negatives for FNAC were noted from which sensitivities and positive predictive values (PPVs) were calculated.

RESULTS: FNAC was performed in 698 of 1310 patients. Mean age was 48.3 years. There were 9 (1.3%) male breast cancer patients. 696 (99.7%) patients had a palpable lump with a mean tumor size of 5.3 cm. 54.2% of the patients were clinically node positive. While over 80% of patients were diagnosed on the basis of FNAC before 2000, less than 50% of the patients had an FNAC after 2010. FNAC diagnosed malignancy in 627 patients, while it was inconclusive in 69 and false negative in two patients. No false-positive results were seen. These figures yield an absolute sensitivity of 89.8% and a complete sensitivity of 99.7% for FNAC with a 100% PPV.

CONCLUSIONS: FNAC is a reliable tool for diagnosing cancer in suspicious breast lesions with a good sensitivity and PPV in hands of an experienced cytopathologist. Surgical treatment may be safely undertaken based on FNAC particularly in early operable breast cancers suitable for breast conservation.

DOI: 10.1007/s00268-017-3906-x
PMID: 28160027

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Mucormycoses are opportunistic fungal infections with a high mortality rate. *Rhizopus oryzae* is the most common agent implicated in human infections. Although *R. homothallicus* has been previously reported to be a cause of pulmonary mucormycosis, it is the first time that we are reporting as a causative agent of rhino-orbital and cutaneous mucormycosis.

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INTRODUCTION: Depression and diabetes are highly prevalent worldwide and often co-exist, worsening outcomes for each condition. Barriers to diagnosis and treatment are exacerbated in low and middle-income countries with limited health infrastructure and access to mental health treatment. The INtegrating DEPrEssioN and Diabetes treatmENT (INDEPENDENT) study tests the sustained effectiveness and

cost-effectiveness of a multi-component care model for individuals with poorly-controlled diabetes and depression in diabetes clinics in India. MATERIALS AND METHODS: Adults with diabetes, depressive symptoms (Patient Health Questionnaire-9 score \geq 10), and \geq 1 poorly-controlled cardiometabolic indicator (either HbA1c \geq 8.0%, SBP \geq 140mmHg, and/or LDL \geq 130mg/dl) were enrolled and randomized to the intervention or usual care. The intervention combined collaborative care, decision-support, and population health management. The primary outcome is the between-arm difference in the proportion of participants achieving combined depression response (\geq 50% reduction in Symptom Checklist score from baseline) AND one or more of: \geq 0.5% reduction in HbA1c, \geq 5mmHg reduction in SBP, or \geq 10mg/dl reduction in LDL-c at 24months (12-month intervention; 12-month observational follow-up). Other outcomes include control of individual parameters, patient-centered measures (i.e. treatment satisfaction), and cost-effectiveness.

RESULTS: The study trained seven care coordinators. Participant recruitment is complete - 940 adults were screened, with 483 eligible, and 404 randomized (196 to intervention; 208 to usual care). Randomization was balanced across clinic sites.

CONCLUSIONS: The INDEPENDENT model aims to increase access to mental health care and improve depression and cardiometabolic disease outcomes among complex patients with diabetes by leveraging the care provided in diabetes clinics in India (clinicaltrials.gov number: NCT02022111).

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PMCID: PMC5580499 [Available on 2018-09-01]

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BACKGROUND: Intracranial schwannomas most commonly arise from the vestibulocochlear nerve and less frequently from trigeminal, facial, and hypoglossal nerves. Intracranial schwannomas unrelated to cranial nerves are very rare; only approximately 50 cases have been reported in the literature. Tentorial schwannoma (TS) is even rarer, with only 13 cases reported to date. We present a rare case of giant TS.

CASE DESCRIPTION: A 21-year-old man presented with generalized headache and dizziness for the past 6 months and worsening of symptoms for the past 2 months. On evaluation, he was found to have a cystic lesion arising from the right tentorium with multiple internal septa and fluid levels, with both supratentorial and infratentorial extension. The presence of a dural tail sign and tentorial origin led us to make a preoperative diagnosis of tentorial meningioma. The patient underwent complete excision, and a diagnosis of TS was made based on histopathologic analysis.

CONCLUSIONS: TSs are extremely rare. Knowledge of radiologic and morphologic features can be helpful in making a preoperative diagnosis. The dural tail sign, which is considered a characteristic feature of meningioma, is commonly seen in TS as well, and thus TS should always be considered in the differential diagnosis

of lesions arising from the tentorium.

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The black turtle bean (BTB) is most widely consumed legume all over the world having anticancer activity. The aim of the study was to analyse the apoptotic effects of BTB extracts on human breast cancer cell lines. Plant extract was prepared by homogenization and centrifugation. The cytotoxic effects of BTB was evaluated by MTT assay and their apoptotic effects were characterized by DNA fragmentation, nuclear staining assay, mitochondrial membrane potential analysis, annexin-V FITC and caspase 3/7 activity assay. The changes in cell cycle and gene expression of cell lines were analysed by flow cytometry and qRT-PCR, respectively. BTB extract showed cytotoxicity with IC50 values of 50 µg/ml in MCF-7 and MDA-MB231 cells. The caspase 3/7 was activated in the cancer cells treated with BTB extract leading to cell death by apoptosis. Moreover, there was significant increase in the expression of Bax as well as decrease in the Bcl-2 and Bcl-xL expression with in a dose dependent manner in both cells. It induces cell cycle arrest in S and G2/M phase in MCF-7 and MDA-MB231 cells, respectively. The mitochondrial membrane potential was decreased in BTB treated cells thereby transducing the apoptotic signal through the mitochondrial pathway and it also causes DNA fragmentation. Thus, it can be concluded that BTB induces the apoptosis in MCF-7 and MDA-MB-231 cells through intrinsic and extrinsic pathway and can be explored further for promising candidate to combat breast cancer. BTB extract exhibit anti-cancer activity by inducing apoptosis in breast cancer cell lines.

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DevR/DosR is a key mediator of 'dormancy' adaptation in Mycobacterium tuberculosis in response to gaseous stresses such as hypoxia that inhibit aerobic mode of respiration. In the present study, a temporal analysis over a 1 year period has revealed robust expression of representative DevR regulon genes devR, hspX and tgs1, during long-term 'dormancy' adaptation to hypoxia. Notably, a predominant proportion of long-term hypoxia-adapted bacteria were characterized by their inability to grow on solid media, accumulation of triacylglycerols and recovery of growth in liquid media. Persistent expression of HspX and the accumulation of triacylglycerols reveal a previously underappreciated role of DevR during adaptation to extended hypoxia, and endorse DevR as an effective target for thwarting the sustained survival of 'dormant' subpopulation of M. tuberculosis.

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Twenty-seven cases of Astrocytoma were studied to assess the role of a newly introduced proliferation marker-Proliferating Cell Nuclear Antigen (PCNA) in improving prognostic accuracy in comparison to traditional histologic methods like grading. The study revealed a direct correlation between grading and PCNA expression as determined by labelling indices (LI). A 25% PCNA LI separated low and high grade tumors. The difference between PCNA LI's of patients who were alive and those who were dead at the end of the study was statistically significant. However, in this study with limited follow-up, statistically significant relation to survival and recurrence could not be established. The study introduces a new method of assessing tumor biology that enables objectivity in prediction of tumor behaviour.

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AIM: We aimed to compare white matter structural changes in specific tracts by diffusion tensor imaging (DTI) tractography in patients with bipolar disorder (BD) I, non-ill first-degree relatives (FDR) of the patients, and healthy controls (HC).

METHODS: In a cross-sectional study, we studied right-handed subjects consisting of 16 euthymic BD I patients, 15 FDR, and 15 HC. The anterior thalamic radiation, uncinate fasciculus, corpus callosum, and cingulum bundle were reconstructed by DTI tractography. Mean fractional anisotropy (FA) and apparent diffusion coefficient (ADC) values were compared for group differences followed by post-hoc analysis.

RESULTS: The three groups did not differ in terms of sociodemographic variables. There were significant group differences in the FA values among the BD I patients, their FDR, and the HC for the corpus callosum, the dorsal part of the right cingulum bundle, the hippocampal part of the cingulum bundle bilaterally, and the uncinate fasciculus ($P < 0.001$). The FA values in the patients were significantly lower than in controls, and FDR also showed similar differences; however, they were smaller than those in patients. No significant difference was found between the groups for FA values of the dorsal part of the left cingulum bundle and anterior thalamic radiation. Significant differences were present for ADC values among the groups for the corpus callosum, the dorsal and hippocampal parts of the cingulum, anterior thalamic radiation, and uncinate fasciculus bilaterally ($P < 0.01$). The FA and ADC values did not correlate significantly with age or any clinical variables.

CONCLUSION: These findings suggest that BD patients and their FDR show alterations in microstructural integrity of white matter tracts, compared to the healthy population.

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AIMS: This study was conducted to compare the barbed vs. traditional suture technique in capsular closure of total knee arthroplasty in terms of closure time, cost, needle prick injury, post-operative complication, blood loss and post-operative function.

PATIENTS AND METHODS: Eighty patients in a barbed suture group and 90 in a traditional group were enrolled in this prospective randomized study.

RESULTS: Barbed suture was associated with 4.1 minutes ($P < 0.001$) faster closure. It was found to be cheaper in terms of direct material cost [30.4%]. Needle prick injury was found in 6.7% ($P = 0.020$) of cases in the traditional group. Blood loss, post-operative complication and post-operative function were comparable in both groups.

CONCLUSION: Barbed suture use in capsular closure of knee arthroplasty is an efficient and cost effective method, and recommended for use in the future.

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PMID: 28639008

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OBJECTIVES: Cathepsin L (CTSL) and B (CTSB) have a crucial role in extracellular matrix (ECM) degradation and tissue remodeling, which is a prominent feature of fibrogenesis. The aim of this study was to determine the role and clinical significance of these cathepsins in liver fibrosis.

METHODS: Hepatic histological CTSL and CTSB expression were assessed in experimental models of liver fibrosis, patients with liver cirrhosis, chronic viral hepatitis, and controls by real-time PCR and immunohistochemistry. Plasma levels of CTSL and CTSB were analyzed in 51 liver cirrhosis patients (Child-Pugh stages A, B and C) and 15 controls.

RESULTS: Significantly enhanced CTSL mRNA ($P=0.02$) and protein ($P=0.01$) levels were observed in the liver of carbon tetrachloride-treated mice compared with controls. Similarly, hepatic CTSL and CTSB mRNA levels ($P=0.02$) were markedly increased in *Abcb4*^{-/-} (ATP-binding cassette transporter knockout) mice compared with wild-type littermates. Elevated levels of CTSL and CTSB were also found in the liver ($P=0.001$) and plasma ($P<0.0001$) of patients with hepatic cirrhosis compared with healthy controls. Furthermore, CTSL and CTSB levels correlated well with the hepatic collagen ($r=0.5$, $P=0.007$; $r=0.64$, $P=0.0001$). CTSL and CTSB levels increased with the Child-Pugh stage of liver cirrhosis and correlated with total bilirubin content ($r=0.4/0.2$; $P\leq 0.05$). CTSL, CTSB, and their combination had a high diagnostic accuracy (area under the curve: 0.91, 0.89 and 0.96, respectively) for distinguishing patients from controls.

CONCLUSIONS: Our data demonstrate the overexpression of CTSL and CTSB in patients and experimental mouse models, suggesting their potential as diagnostic biomarkers for chronic liver diseases.

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Dental caries is one of the most prevalent disease (about 50%) in children across the globe. If not treated in time, it can affect not only the mastication function but also the speech, smile and psychosocial environment and the quality of life of the child and the family. The treatment of dental diseases is very expensive in all countries and prevention is very simple and effective. The caries in children below 6 y is called early childhood caries (ECC). It is most commonly caused by milk bottle or mother's feed during night. The ECC spreads very fast and can cause severe pain, abscess, swelling, fever and psychological

disturbances in children. The treatment of ECC requires multiple appointments and still the prognosis is not very promising in mutilated dentitions. A physician or pediatrician can easily identify early caries and habits of parents leading to caries and can counsel them for prevention and refer them to the specialist. Good oral hygiene, dietary modification with respect to use of sugar and sticky food and healthy diet can help in preventing this disease in children. The need of the time is to appraise all on the methods of dental caries prevention.

DOI: 10.1007/s12098-017-2381-6

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INTRODUCTION: Enterococcal infection has emerged as a major therapeutic challenge. Emergence of High Level Aminoglycoside Resistance (HLAR) and Vancomycin-Resistant Enterococcus (VRE) has further limited the drug therapy in enterococcal infections. However, nitrofurantoin being an old drug reported to have less resistance in comparison to the other classes of antimicrobial agents. **AIM:** To detect susceptibility of nitrofurantoin against VRE isolates from Urinary Tract Infection (UTI) of outdoor and indoor patient departments.

MATERIALS AND METHODS: An observational study was carried out at a tertiary care hospital in New Delhi over a period of six months (from November 2015 to April 2016). A total of 14,714 urine samples were collected and processed from the patients symptomatic for UTI. The enterococcal isolates were identified and confirmed by standard phenotypic tests. The antimicrobial susceptibility tests of isolated organisms were performed by Kirby-Bauer Disc Diffusion Method as per Clinical and Laboratory Standards Institute (CLSI) 2015 guidelines. The Wilcoxon rank-sum (Mann-Whitney) test was used to compare continuous variables. Chi-square or Fisher's exact tests were used to compare categorical variables. $p < 0.05$ was considered as significant.

RESULTS: A total of 70 enterococci species {*Enterococcus faecalis* (n=9), *Enterococcus faecium*, (n=61)} were isolated. Twenty six out of 70 isolates were observed resistant to vancomycin. Among 26 VRE, 21(80.76%) were susceptible to nitrofurantoin. Both the species {*E. faecalis* (80.32%) and *E. faecium* (88.8%)} were uniformly susceptible to nitrofurantoin.

CONCLUSION: Nitrofurantoin has retained antimicrobial efficacy against emerging VRE in vitro and can be used for treatment of enterococcal urinary tract infections.

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PMCID: PMC5535353

PMID: 28764160

89: Mehra NK, Baranwal AK, Tait BD. Editorial: Antibody Repertoire and Graft Outcome following Solid Organ Transplantation. *Front Immunol*. 2017 Jun 9;8:648. doi: 10.3389/fimmu.2017.00648. eCollection 2017. PubMed PMID: 28649244; PubMed Central PMCID: PMC5465236.

90: Mehra NK, Chopra GS. IMPORTANCE OF DONOR SELECTION IN RENAL TRANSPLANTATION. *Med J Armed Forces India*. 1994 Jul;50(3):205-210. doi: 10.1016/S0377-1237(17)31063-8. Epub 2017 Jun 27. PubMed PMID: 28769203; PubMed Central PMCID: PMC5529729.

Renal transplantation has become a treatment of choice for patients with end stage renal disease. A successful transplant is the result of a combination of several factors acting synergistically, such as the degree of HLA compatibility between donor and the recipient, pretransplant blood transfusions, the recipient's state of immunoreactivity and sensitization, immunosuppressive therapy given in post operative period etc. Donor selection appears to be the most critical factor for the long term success of the organ graft. In this brief review, some of the important parameters of donor selection in renal transplantation are highlighted.

DOI: 10.1016/S0377-1237(17)31063-8
PMCID: PMC5529729
PMID: 28769203

91: Mishra RK, Mahajan C, Prabhakar H, Kapoor I, Bithal PK. Effect of nitrous oxide on bispectral index values at equi-minimum alveolar concentrations of sevoflurane and desflurane. *Indian J Anaesth*. 2017 Jun;61(6):482-485. doi: 10.4103/ija.IJA_363_16. PubMed PMID: 28655953; PubMed Central PMCID: PMC5474916.

BACKGROUND AND AIMS: Bispectral index (BIS) values may be anaesthetic agent-specific, depending on their ability to suppress the electroencephalogram (EEG) signals. We carried out a prospective, randomised clinical trial to study the effect of nitrous oxide (N₂O) on the BIS values at an equi-minimum alveolar concentration (MAC) of sevoflurane and desflurane.

METHODS: Sixty adult patients undergoing spine surgery were randomised into two groups; Group S (sevoflurane; n = 30) and Group D (desflurane; n = 30) for the maintenance of anaesthesia in oxygen and air or oxygen and N₂O mixture (FiO₂-0.4) (Stage 1). BIS and fraction of inspired and end-tidal concentration of agents were noted at 1.0 MAC. In Stage 2, air or N₂O was discontinued and the other carrier gas was introduced. At steady state of this carrier gas, values were again noted as in Stage 1. Statistical analysis was performed using two-way analysis of variance followed by Bonferroni correction, and Student's t-test for paired data. P<0.05 was considered statistically significant.

RESULTS: With air-oxygen as the carrier gas, sevoflurane and desflurane resulted in comparable BIS values (P = 0.44). With addition of 60% N₂O, there was a significant increase in BIS values at 1.0 MAC for both the agents. Furthermore, higher BIS values were observed with sevoflurane compared to desflurane (P = 0.01).

CONCLUSION: Sevoflurane and desflurane at equi-MAC concentration exert similar effect on BIS values when used with air-oxygen. N₂O results in higher BIS values; this effect is more pronounced in combination with sevoflurane.

DOI: 10.4103/ija.IJA_363_16
PMCID: PMC5474916
PMID: 28655953

Conflict of interest statement: There are no conflicts of interest.

92: Mohan VK, Nisa N. Importance of Sonography for Guiding Central Venous Cannulation in Patients with Neurofibromatosis. *Turk J Anaesthesiol Reanim*. 2017 Jun;45(3):169-171. doi: 10.5152/TJAR.2017.92259. Epub 2017 Apr 27. PubMed PMID:

28752008; PubMed Central PMCID: PMC5512396.

A 15-year-old boy with neurofibromatosis type 1 (NF1) was referred to us for central venous catheter insertion, and on ultrasound of the neck, he was found to have extensive involvement of the brachial plexus due to the nerve sheath tumour. Multiple hypoechogenic lesions resembling the internal jugular vein and internal carotid artery were visualised and could be differentiated from the vessels by Doppler ultrasound. The importance of analyzing sonographic images of nerve sheath tumours, which can mimic blood vessels, and the importance of Doppler ultrasound for guiding central venous catheters in such patients to avoid nerve injury are discussed in this case report.

DOI: 10.5152/TJAR.2017.92259

PMCID: PMC5512396

PMID: 28752008

Conflict of interest statement: Conflict of Interest: No conflict of interest was declared by the authors.

93: Mohanti BK, Thakar A, Kaur J, Bahadur S, Malik M, Gandhi AK, Bhasker S, Sharma A. Postoperative radiotherapy dose requirement in standard combined-modality practice for head and neck squamous cell carcinoma: Analysis of salient surgical and radiotherapy parameters in 2 cohorts. *Head Neck*. 2017 Sep;39(9):1788-1796. doi: 10.1002/hed.24836. Epub 2017 Jun 6. PubMed PMID: 28586138.

BACKGROUND: This study compared 2 sequential cohorts to identify the postoperative radiotherapy (PORT) dose requirement for head and neck squamous cell carcinoma (HNSCC).

METHODS: Two distinct PORT dose regimens were prescribed over 11 years; group 1 received 56 Gy or less, and group 2 received 60 Gy or more. The 2D and 3D techniques were used.

RESULTS: Two sequential cohorts consisted of 478 patients, with mean and median follow-up for group 1 and 2 as: 37.0 versus 28.5 months and 13.8 versus 13.1 months, respectively. Grades 3-4 mucosal toxicities (11.4% vs 28.3%), hospitalization (3.2% vs 17.4%), and nasogastric feeding (11.9% vs 29.7%) were higher in group 2. The 2-year disease-free survival (DFS) was higher with PORT >60 Gy for the following factors: age \leq 50 years ($P = .041$); \geq 4 positive nodes ($P = .029$); and overall treatment time (OTT) \geq 100 days ($P = .042$).

CONCLUSION: Except for the benefit of doses >60 Gy for limited parameters, a lower PORT dose did not compromise the results and can potentially reduce the morbidities and healthcare costs.

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PMID: 28586138

94: Mustfa SA, Singh M, Suhail A, Mohapatra G, Verma S, Chakravorty D, Rana S, Rampal R, Dhar A, Saha S, Ahuja V, Srikanth CV. SUMOylation pathway alteration coupled with downregulation of SUMO E2 enzyme at mucosal epithelium modulates inflammation in inflammatory bowel disease. *Open Biol*. 2017 Jun;7(6). pii: 170024. doi: 10.1098/rsob.170024. PubMed PMID: 28659381; PubMed Central PMCID: PMC5493774.

Post-translational modification pathways such as SUMOylation are integral to all cellular processes and tissue homeostasis. We investigated the possible involvement of SUMOylation in the epithelial signalling in Crohn's disease (CD)

and ulcerative colitis (UC), the two major forms of inflammatory bowel disease (IBD). Initially in a murine model of IBD, induced by dextran-sulfate-sodium (DSS mice), we observed inflammation accompanied by a lowering of global SUMOylation of colonic epithelium. The observed SUMOylation alteration was due to a decrease in the sole SUMO E2 enzyme (Ubc9). Mass-spectrometric analysis revealed the existence of a distinct SUMOylome (SUMO-conjugated proteome) in DSS mice with alteration of key cellular regulators, including master kinase Akt1. Knocking-down of Ubc9 in epithelial cells resulted in dramatic activation of inflammatory gene expression, a phenomenon that acted via reduction in Akt1 and its SUMOylated form. Importantly, a strong decrease in Ubc9 and Akt1 was also seen in endoscopic biopsy samples (N = 66) of human CD and UC patients. Furthermore, patients with maximum disease indices were always accompanied by severely lowered Ubc9 or SUMOylated-Akt1. Mucosal tissues with severely compromised Ubc9 function displayed higher levels of pro-inflammatory cytokines and compromised wound-healing markers. Thus, our results reveal an important and previously undescribed role for the SUMOylation pathway involving Ubc9 and Akt1 in modulation of epithelial inflammatory signalling in IBD.

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DOI: 10.1098/rsob.170024

PMCID: PMC5493774

PMID: 28659381

95: Narula J, Chauhan S, Ramakrishnan S, Gupta SK. Electrical Cardiometry: A Reliable Solution to Cardiac Output Estimation in Children With Structural Heart Disease. *J Cardiothorac Vasc Anesth.* 2017 Jun;31(3):912-917. doi: 10.1053/j.jvca.2016.12.009. Epub 2016 Dec 12. PubMed PMID: 28262447.

OBJECTIVE: Comparison of cardiac output (CO) obtained using electric cardiometry (EC) and pulmonary artery catheterization (PAC) in pediatric patients with congenital structural heart disease.

DESIGN: Prospective, observational study.

SETTING: A tertiary hospital.

PARTICIPANTS: The study comprised 50 patients scheduled to undergo cardiac catheterization.

INTERVENTIONS: CO data triplets were obtained simultaneously from the cardiometry device ICON (Osypka Medical, Berlin, Germany) and PAC at the following predefined time points-(1) T1: 5 minutes after arterial and venous cannulation and (2) T2: 5 minutes postprocedure; the average of the 3 readings was calculated. Reliability analysis and Bland-Altman analysis were performed to determine the limits of agreement, mean bias, and accuracy of the CO measured with EC.

MEASUREMENTS AND MAIN RESULTS: The measured EC-cardiac index 4.22 (3.84-4.60) L/min/m² and PAC-cardiac index 4.26 (3.67-4.67) L/min/m² were statistically insignificant (p value>0.05) at T1. Bland-Altman analysis revealed a mean bias of 0.0051 L/min/m² and precision limits of ± 0.4927 L/min/m². The intraclass correlation coefficient was 0.789 and Cronbach's alpha was 0.652, indicating good reproducibility and internal consistency between the two techniques.

Postcatheterization analysis also revealed strong agreement and reliability between the two techniques.

CONCLUSIONS: This study demonstrated that cardiac indices measured in children with a variety of structural heart diseases using EC reliably represent absolute values obtained using PAC. EC technology is simple and easy to use and offers noninvasive beat-to-beat tracking of CO and other hemodynamic parameters in children with structurally abnormal hearts.

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DOI: 10.1053/j.jvca.2016.12.009
PMID: 28262447

96: Nehate C, Aji Alex MR, Kumar A, Koul V. Combinatorial delivery of superparamagnetic iron oxide nanoparticles (Fe_3O_4) and doxorubicin using folate conjugated redox sensitive multiblock polymeric nanocarriers for enhancing the chemotherapeutic efficacy in cancer cells. *Mater Sci Eng C Mater Biol Appl*. 2017 Jun 1;75:1128-1143. doi: 10.1016/j.msec.2017.03.024. Epub 2017 Mar 6. PubMed PMID: 28415398.

Redox sensitive, folate conjugated multiblock polymeric system of (-PLGA-PEG-PLGA-urethane-ss-) demonstrated self-assembly into stable nanoplateforms. The polymeric nanocarriers were encapsulated with doxorubicin and highly crystalline $\gamma\text{-Fe}_2\text{O}_3$ superparamagnetic iron oxide nanoparticles (SPIONs), for co-delivery of the same to cancer cells, with average particle size of $\sim 170\text{nm}$ and zeta potential of $\sim -33\text{mV}$. Furthermore, the designed formulation was evaluated for protein adsorption, hemo-cytocompatibility and stability. Glutathione (GSH) induced redox sensitivity of the nanocarriers was depicted by ~ 4.47 fold increase in drug release in the presence of 10mM GSH. In vitro cellular uptake studies of the designed nanocarriers showed synergistic cytotoxic effect in folate overexpressing cells (HeLa and MDA-MB-231), after subjecting the cells to radio frequency (RF) induced hyperthermia ($\sim 43^\circ\text{C}$). Negligible effect of the combinatorial therapy was observed in normal cells (L929). The developed polymeric system depicted facile synthesis, reproducibility and potential for achieving combinatorial and targeted delivery of drug and SPIONs to cancer cells. This combinatorial approach can help in achieving better therapeutic effect with minimal side effects of chemotherapy.

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DOI: 10.1016/j.msec.2017.03.024
PMID: 28415398 [Indexed for MEDLINE]

97: Panda PK, Mavidi SK, Wig N, Garg A, Nalwa A, Sharma MC. Intracranial Aspergillosis in an Immunocompetent Young Woman. *Mycopathologia*. 2017 Jun;182(5-6):527-538. doi: 10.1007/s11046-016-0106-4. Epub 2017 Jan 4. PubMed PMID: 28054219.

Intracranial aspergillosis (ICA) is very rare in the immunocompetent individuals, usually misdiagnosed as a tumor or an abscess. A high index of clinical suspicion is required in patients who present with focal neurological deficits, headache, or seizures. We report the case of a 25-year-old immunocompetent female, who presented with a 15-month history of headache, seizures, left-sided proptosis and ophthalmoplegia, and right hemiparesis. Recovery from the symptoms and decrease in the lesion size seen on the radiological assessment were achieved through two decompressive craniotomies followed by prolonged combined systemic antifungal therapies. Although the initial neuroimaging suggested a mitotic pathology, the surgical sample confirmed ICA. Now the patient is on single antifungal therapy (Tab. voriconazole, 200 mg twice daily) and doing her daily activities, but with a reduced intelligent quotient. We report a challenging case of ICA where multiple courses of combined antifungal therapies and repeat surgeries paved the way for a good prognosis.

DOI: 10.1007/s11046-016-0106-4
PMID: 28054219

98: Patel D, Tandon R, Ganger A, Vij A, Lalwani S, Kumar A. Study of death to preservation time and its impact on utilisation of donor corneas. *Trop Doct*. 2017

Oct;47(4):365-370. doi: 10.1177/0049475517713406. Epub 2017 Jun 13. PubMed PMID: 28610538.

To evaluate the impact of death-to-preservation time (DPT) on effective utilisation of donor corneas. In a prospective observational study conducted at our tertiary eye centre, donated corneas received over a 15-month period from November 2011 to January 2013 were evaluated. Donor age, donor refrigeration (done or not), DPT, endothelial cell density (ECD), corneal grading, clinical utilisation and surgical outcome after graft transplantation were noted. To analyse the impact of different DPT on donor cornea transplantation, primary outcome measures (corneal grading and endothelial cell density) and secondary outcome measures (primary graft failure and graft infection) were analysed. A total of 990 corneas were assessed. Primary outcomes showed no significant difference for higher DPT ($P > 0.01$). ECD, where DPT was > 12 h, was better for refrigerated corneas ($P < 0.001$). Prolonged DPT had no significant effect on primary graft failure ($P = 0.131$) and graft infection ($P = 0.137$) in the first month after transplantation. We find that DPT should not be the only criteria to assess the cornea quality; other donor characteristics should be considered equally important. Donor refrigeration should be encouraged in cases where early retrieval is not possible.

DOI: 10.1177/0049475517713406
PMID: 28610538

99: Patil HA, Kerudi VV, Patil NS, Sharan JS, Tekale PD. Forsus Appliance for Treatment of Class II, Division 2 Malocclusion in Adults. *J Clin Orthod*. 2017 Jun;51(6):347-352. PubMed PMID: 29059062.

100: Prasad M, Vora T, Agarwala S, Laskar S, Arora B, Bansal D, Kapoor G, Chinnaswamy G, Radhakrishnan V, Kaur T, Rath GK, Bakhshi S. Management of Wilms Tumor: ICMR Consensus Document. *Indian J Pediatr*. 2017 Jun;84(6):437-445. doi: 10.1007/s12098-017-2305-5. Epub 2017 Apr 3. Review. PubMed PMID: 28367612.

Wilms tumor (WT) is the most common renal tumor of childhood. Although multidisciplinary care including surgery, chemotherapy and radiotherapy have greatly improved the survival rates in WT, there is a scope for further improvement in India and other resource-poor settings. In resource-limited settings, the majority of patients present with large tumors, which may either be unresectable or risky to resect; making preoperative chemotherapy followed by delayed surgery the preferred approach. Histology and staging are used for risk stratification. The imaging procedure of choice is Contrast Enhanced CT scan (CECT) of thorax/ abdomen and pelvis, which is to be done at presentation, as well as for re-evaluation. Surgery is the cornerstone of treatment in WT and Radical Nephroureterectomy and Lymph node sampling is the procedure of choice, to be performed at week 5 in Non Metastatic WT and week 7 in Metastatic WT. WT is an extremely chemosensitive and radiosensitive tumor. Preoperative chemotherapy for Non Metastatic WT consists of 4 wk of Vincristine /Actinomycin and 6 wk of Vincristine /Actinomycin/ Adriamycin for Metastatic WT, with post-operative chemotherapy depending on stage and histology. Radiation therapy is recommended mainly in Stage III and Stage IV WT, with other indications given in the text. Other recommendations, such as treatment of WT in special situations and for supportive care are also detailed in the text.

DOI: 10.1007/s12098-017-2305-5
PMID: 28367612

101: Prasad P, Mittal SA, Chongtham J, Mohanty S, Srivastava T. Hypoxia-Mediated Epigenetic Regulation of Stemness in Brain Tumor Cells. *Stem Cells*. 2017 Jun;35(6):1468-1478. doi: 10.1002/stem.2621. Epub 2017 Apr 24. PubMed PMID: 28376560.

Activation of pluripotency regulatory circuit is an important event in solid tumor progression and the hypoxic microenvironment is known to enhance the stemness feature of some cells. The distinct population of cancer stem cells (CSCs)/tumor initiating cells exist in a niche and augment invasion, metastasis, and drug resistance. Previously, studies have reported global hypomethylation and site-specific aberrant methylation in gliomas along with other epigenetic modifications as important contributors to genomic instability during glioma progression. Here, we have demonstrated the role of hypoxia-mediated epigenetic modifications in regulating expression of core pluripotency factors, OCT4 and NANOG, in glioma cells. We observe hypoxia-mediated induction of demethylases, ten-eleven-translocation (TET) 1 and 3, but not TET2 in our cell-line model. Immunoprecipitation studies reveal active demethylation and direct binding of TET1 and 3 at the Oct4 and Nanog regulatory regions. Tet1 and 3 silencing assays further confirmed induction of the pluripotency pathway involving Oct4, Nanog, and Stat3, by these paralogues, although with varying degrees. Knockdown of Tet1 and Tet3 inhibited the formation of neurospheres in hypoxic conditions. We observed independent roles of TET1 and TET3 in differentially regulating pluripotency and differentiation associated genes in hypoxia. Overall, this study demonstrates an active demethylation in hypoxia by TET1 and 3 as a mechanism of Oct4 and Nanog overexpression thus contributing to the formation of CSCs in gliomas. *Stem Cells* 2017;35:1468-1478.

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DOI: 10.1002/stem.2621
PMID: 28376560

102: Priyadarshini P, Bisoi AK, Chauhan S, Vyas S, Gupta SD, Chumber S. Benevolent Renal Angiomyolipoma with Intra-cardiac Extension-A Challenge in Diagnosis and Management. *Indian J Surg*. 2017 Jun;79(3):259-261. doi: 10.1007/s12262-016-1553-3. Epub 2016 Oct 19. PubMed PMID: 28659682; PubMed Central PMCID: PMC5473797.

While intra-caval and intra-cardiac extension of retroperitoneal tumors is extremely rare, it is almost unheard-of in benign tumors. We report the challenges in diagnosis and management of the first case of a renal angiomyolipoma (AML) with intra-ventricular extension in a young man who presented with pain and a lump in the abdomen.

DOI: 10.1007/s12262-016-1553-3
PMCID: PMC5473797 [Available on 2018-06-01]
PMID: 28659682

103: Rath S, Yadav L, Tewari A, Chantler T, Woodward M, Kotwal P, Jain A, Dey A, Garg B, Malhotra R, Goel A, Farooque K, Sharma V, Webster P, Norton R. Management of older adults with hip fractures in India: a mixed methods study of current practice, barriers and facilitators, with recommendations to improve care pathways. *Arch Osteoporos*. 2017 Dec;12(1):55. doi: 10.1007/s11657-017-0344-1. Epub 2017 Jun 2. PubMed PMID: 28577286; PubMed Central PMCID: PMC5486685.

With the introduction of cisplatin, the outcome of children with malignant germ cell tumors (MGCT) has improved to nearly 90% 5 year survival. Over the years,

through the results of various multinational co-operative trials, the chemotherapy and surgical guidelines for both the gonadal and extra-gonadal MGCTs have been refined to decrease the early and late morbidities and at the same time improve survival. Introduction of risk categorization has further added to this effort. There has been no recommendation on how the children with malignant germ cell tumors should be treated in India. The current manuscript is written with the objective of developing a consensus guideline for practitioners at a National level. Based on extensively reviewed literature and personal experience of the major pediatric oncology centres in India, the ICMR Expert group has made recommendations for management of children with MGCT India.

DOI: 10.1007/s12098-017-2308-2

PMID: 28364343

104: Ratre S, Yadav N, Yadav YR, Parihar VS, Bajaj J, Kher Y. Endoscopic Management of Arnold-Chiari Malformation Type I with or without Syringomyelia. *J Neurol Surg A Cent Eur Neurosurg*. 2017 Jun 6. doi: 10.1055/s-0036-1594011. [Epub ahead of print] PubMed PMID: 28586935.

Dramatic advancement has been made in the management of children with hepatoblastoma (HB) over the past 3 decades owing to the improvement in diagnostic imaging, new chemotherapeutic agents, better surgical care and availability of liver transplantation. These advances are the end results of contributions from 4 major study groups across the globe including International Society of Pediatric Oncology - Liver Tumor Strategy Group (SIOPEL), Children's Oncology Group (COG), German Pediatric Hematology Oncology Group (GPOH) and Japanese Pediatric Liver Tumor Study Group (JPLT). The current manuscript is written with the objective of developing a consensus guideline for practitioners at a National level. Based on literature and personal experience over last 3 decades, the Indian Council of Medical Research (ICMR) Expert group has made recommendations for management of children with HB in resource-challenged nations including India.

DOI: 10.1007/s12098-017-2301-9

PMID: 28353129

105: Rawat S, Ahlawat P, Kakria A, Kumar G, Rangaraju RR, Puri A, Pal M, Chauhan D, Devnani B, Chadha P. Comparison between weekly cisplatin-enhanced radiotherapy and cetuximab-enhanced radiotherapy in locally advanced head and neck cancer: first retrospective study in Asian population. *Asia Pac J Clin Oncol*. 2017 Jun;13(3):195-203. doi: 10.1111/ajco.12581. Epub 2016 Nov 3. PubMed PMID: 27813277.

BACKGROUND: Neuromediators produced by enteric nervous system regulate inflammatory processes via interacting with enteric immune system. Role of γ -aminobutyric acid (GABA), which is also a neuromediator, has been implicated in autoimmune diseases like multiple sclerosis, type 1 diabetes, and rheumatoid arthritis, where they modulate the immune responses. However, its role in ulcerative colitis (UC) has not been defined.

AIMS: This study was carried out to investigate the role of GABA and its signaling components in pathogenesis of UC.

METHODS: Peripheral blood, colon mucosal biopsy, and fecal specimens were collected from UC and control groups. Quantification of GABA was done using ELISA. Expression of GABAergic signal system components was analyzed through RT-PCR analysis. Enumeration of GABA-producing bacteria was done by qPCR analysis. Activity of p38 MAPK and expression of proinflammatory cytokines were determined by immunohistochemistry and RT-PCR analysis, respectively.

RESULTS: GABA levels were significantly reduced in patients with UC as compared

to control group when measured in serum and colon biopsy. Altered expression of GABAergic signal system was observed in UC patients. Reduced abundance of selected GABA-producing bacteria was detected in stool samples of UC patients as compared to control. p38 MAPK activity and expression of its downstream effector cytokines were found to be increased in UC patients as compared to control. CONCLUSIONS: Reduced levels of GABA were observed in patients with UC, and this leads to hyperactivation of p38 MAPK and overexpression of downstream effector cytokines suggesting a role of GABA in pathogenesis of UC.

DOI: 10.1007/s10620-017-4662-3

PMID: 28667430 [Indexed for MEDLINE]

106: Ray S, Tripathi M, Chandra SP, Chakravarty K. Protocols in contemporary epilepsy surgery-a short communication. *Int J Surg.* 2017 Aug;44:350-352. doi: 10.1016/j.ijvsu.2017.06.076. Epub 2017 Jun 22. PubMed PMID: 28648797.

107: Roy S, Gandhi AK, Devnani B, Singh L, Mohanti BK. Malignant peripheral nerve sheath tumor of the tongue with an unusual pattern of recurrence. *J Egypt Natl Canc Inst.* 2017 Jun;29(2):115-118. doi: 10.1016/j.jnci.2016.11.001. Epub 2017 Mar 1. PubMed PMID: 28258916.

Malignant peripheral nerve sheath tumor (MPNST) of oral cavity is an extremely uncommon malignancy. Less than 15 cases have been reported since 1973 though none of them describes a distant metastasis. We present a rare case of MPNST of the tongue who presented with features of hypoglossal nerve palsy. Incisional biopsy showed a malignant spindle cell tumor in the sub-epithelial connective tissue. The tumor cells were immune-positive for S-100. He underwent surgery followed by adjuvant chemo-radiation. Later the disease recurred in the form of isolated pelvic bone metastasis. Palliative chemotherapy was offered to him. With this case report we intend to refer to such unusual presentation and pattern of recurrence in a MPNST of tongue.

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DOI: 10.1016/j.jnci.2016.11.001

PMID: 28258916

108: Rudramurthy SM, Chakrabarti A, Paul RA, Sood P, Kaur H, Capoor MR, Kindo AJ, Marak RSK, Arora A, Sardana R, Das S, Chhina D, Patel A, Xess I, Tarai B, Singh P, Ghosh A. Candida auris candidaemia in Indian ICUs: analysis of risk factors. *J Antimicrob Chemother.* 2017 Jun 1;72(6):1794-1801. doi: 10.1093/jac/dkx034. PubMed PMID: 28333181.

Objectives: To identify the risk factors associated with *Candida auris* candidaemia, as this fungus now poses a global threat.

Methods: We performed a subgroup analysis of a previously reported study of 27 Indian ICUs. The clinical data of candidaemia cases due to *C. auris* and other *Candida* species were compared to determine significant risk factors associated with *C. auris* infection.

Results: Of the 1400 candidaemia cases reported earlier, 74 (5.3%) from 19 of 27 ICUs were due to *C. auris*. The duration of ICU stay prior to candidaemia diagnosis was significantly longer in patients with *C. auris* candidaemia (median 25, IQR 12-45 days) compared with the non-*auris* group (median 15, IQR 9-28, $P < 0.001$). Based on logistic regression modelling, admission to north Indian ICUs [OR 2.1 (1.2-3.8); $P = 0.012$], public-sector hospital [OR 2.2 (1.2-3.9); $P =$

0.006], underlying respiratory illness [OR 2.1 (1.3-3.6); P = 0.002], vascular surgery [OR 2.3 (1.00-5.36); P = 0.048], prior antifungal exposure [OR 2.8 (1.6-4.8); P < 0.001] and low APACHE II score [OR 0.8 (0.8-0.9); P = 0.007] were significantly associated with *C. auris* candidaemia. The majority (45/51, 88.2%) of the isolates were clonal. A considerable number of isolates were resistant to fluconazole (n = 43, 58.1%), amphotericin B (n = 10, 13.5%) and caspofungin (n = 7, 9.5%).

Conclusions: Although *C. auris* infection has been observed across India, the number of cases is higher in public-sector hospitals in the north of the country. Longer stay in ICU, underlying respiratory illness, vascular surgery, medical intervention and antifungal exposure are the major risk factors for acquiring *C. auris* infection even among patients showing lower levels of morbidity.

DOI: 10.1093/jac/dkx034

PMID: 28333181 [Indexed for MEDLINE]

109: Saini M, Vanathi M, Dada T, Agarwal T, Dhiman R, Khokhar S. Ocular surface evaluation in eyes with chronic glaucoma on long term topical antiglaucoma therapy. *Int J Ophthalmol*. 2017 Jun 18;10(6):931-938. doi: 10.18240/ijo.2017.06.16. eCollection 2017. PubMed PMID: 28730085; PubMed Central PMCID: PMC5515143.

AIM: To evaluate ocular surface changes and its correlation with the central corneal subbasal nerve fibre layer in chronic glaucoma patients.

METHODS: A prospective comparative study of ocular surface evaluation was performed in 50 eyes of 25 patients using two or more antiglaucoma medications for at least 6mo and 50 eyes of 25 normal subjects without any ocular problems as controls. The study parameters evaluated included visual acuity, intraocular pressure, ocular surface evaluation parameters [fluorescein break-up time (FTBUT), Schirmer's I test, ocular surface staining scores and ocular surface disease index score (OSDI)], central corneal sensation (Cochet Bonnett aesthesiometer), central subbasal nerve fiber layer density (SBNFLD) by confocal microscopy.

RESULTS: The mean values in the glaucoma cases and control groups respectively were as follows: OSDI score (35.89±16.07/6.02±3.84; P=0.001), Schirmer's I test score (7.63±2.64 mm/12.86±1.93 mm; P=0.001), FTBUT (9.44±2.76s/11.8±1.88s; P=0.001), corneal (5.7±2.33/ 1.1±0.58; P=0.001) and conjunctival staining score (5.06±1.94/0.84±0.46; P=0.001), corneal sensitivity (4.68±0.44/5.07±0.37; P=0.076), mean subbasal nerve fiber number (3.58±0.99/5.40±1.70; P=0.001), SBNFL length (1101.44±287.56 µm/1963.70±562.56 µm; P=0.001) and density (6883.94±1798.03 µm/mm²/12 273.15±3516.04 µm/mm²; P=0.001). Dry eye severity of level 2 and 3 was seen in 66% of glaucoma group. Corneal (R²=0.86) and conjunctival staining (R²=0.71) and OSDI score (R²=0.67) showed statistically significant negative correlation with central corneal SBNFLD while FTBUT (R²=0.84), corneal sensitivity (R²=0.52) showed positive correlation to central corneal SBNFLD in the long term topical antiglaucoma medication group.

CONCLUSION: Ocular surface changes and antiglaucoma therapy induced dry eye is found to be associated with decreased SBNFLD in eyes on long term topical antiglaucoma medications.

DOI: 10.18240/ijo.2017.06.16

PMCID: PMC5515143

PMID: 28730085

110: Saluja T, Palkar S, Misra P, Gupta M, Venugopal P, Sood AK, Dharti RM, Shetty A, Dhaded SM, Agarkhedkar S, Choudhury A, Kumar R, Balasubramanian S, Babji S, Adhikary L, Dupuy M, Chadha SM, Desai F, Kukian D, Patnaik BN, Dhingra MS. Live

attenuated tetravalent (G1-G4) bovine-human reassortant rotavirus vaccine (BRV-TV): Randomized, controlled phase III study in Indian infants. *Vaccine*. 2017 Jun 16;35(28):3575-3581. doi: 10.1016/j.vaccine.2017.05.019. Epub 2017 May 20. PubMed PMID: 28536027.

BACKGROUND: Rotavirus remains the leading cause of diarrhoea among children <5years. We assessed immunogenic non-inferiority of a tetravalent bovine-human reassortant rotavirus vaccine (BRV-TV) over the licensed human-bovine pentavalent rotavirus vaccine RV5.

METHODS: Phase III single-blind study (parents blinded) in healthy infants randomized (1:1) to receive three doses of BRV-TV or RV5 at 6-8, 10-12, and 14-16weeks of age. All concomitantly received a licensed diphtheria, tetanus, pertussis, hepatitis B, Haemophilus influenzae type b conjugate vaccine (DTwP-HepB-Hib) and oral polio vaccine (OPV). Immunogenic non-inferiority was evaluated in terms of the inter-group difference in anti-rotavirus serum IgA seroresponse (primary endpoint), and seroprotection/seroresponse rates to DTwP-HepB-Hib and OPV vaccines. Seroresponse was defined as a ≥ 4 -fold increase in titers from baseline to D28 post-dose 3. Non-inferiority was declared if the difference between groups (based on the lower limit of the 95% confidence interval [CI]) was above -10%. Each subject was evaluated for solicited adverse events 7days and unsolicited & serious adverse events 28days following each dose of vaccination.

RESULTS: Of 1195 infants screened, 1182 were randomized (590 to BRV-TV; 592 to RV5). Non-inferiority for rotavirus serum IgA seroresponse was not established: BRV-TV, 47.1% (95%CI: 42.8; 51.5) versus RV5, 61.2% (95%CI: 56.8; 65.5); difference between groups, -14.08% (95%CI: -20.4; -7.98). Serum IgA geometric mean concentrations at D28 post-dose 3 were 28.4 and 50.1U/ml in BRV-TV and RV5 groups, respectively. For all DTwP-HepB-Hib and OPV antigens, seroprotection/seroresponse was elicited in both groups and the -10% non-inferiority criterion between groups was met. There were 16 serious adverse events, 10 in BRV-TV group and 6 in RV5 group; none were classified as vaccine related. Both groups had similar vaccine safety profiles.

CONCLUSION: BRV-TV was immunogenic but did not meet immunogenic non-inferiority criteria to RV5 when administered concomitantly with routine pediatric antigens in infants.

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DOI: 10.1016/j.vaccine.2017.05.019
PMID: 28536027

111: Satyarthee GD. Moyamoya Disease: Impact of Evolving Different Management Approaches to Improve Overall Neurologic Outcome. *World Neurosurg*. 2017 Jun;102:684-686. doi: 10.1016/j.wneu.2017.02.120. PubMed PMID: 28582831.

112: Sawarkar DP, Janmatti S, Kumar R, Singh PK, Gurjar HK, Kale SS, Sharma BS, Mahapatra AK. Cavernous malformations of central nervous system in pediatric patients: our single-centered experience in 50 patients and review of literature. *Childs Nerv Syst*. 2017 Jun 20. doi: 10.1007/s00381-017-3429-7. [Epub ahead of print] PubMed PMID: 28634821.

PURPOSE: Cavernous malformations (CMs) are rare developmental cerebrovascular malformations of the central nervous system with a childhood prevalence of 0.3 to 0.53%. Our purpose was to assess the clinical features and microsurgical outcome in pediatric central nervous system (CNS) CMs.

MATERIAL AND METHODS: We retrospectively enrolled all the CM patients admitted to our institute from 1 January 2001 to 31 December 2014. Data was analyzed for

their clinical features and surgical outcome.

RESULTS: A total of 50 patients with CMs (30 supratentorial, 14 infratentorial, and 6 spinal) with a mean age of 14 years (3-18 years, SD \pm 4.64) were enrolled into the study. Most of these patients (78%) were male. Size varied from 1.2 to 6 cm. Three patients had multiple CMs. Symptoms of CMs were site specific. Seizure was the most common symptom (63.3%) of CMs at supratentorial location followed by headache (46%) and neurodeficiency (26%), while all brainstem and spinal CMs presented with neurodeficiencies. History of clinically significant acute hemorrhage was present in 19.2% of supratentorial (ST) superficial CMs, 50% of ST deep CMs, 25% of cerebellar CMs, 44.4% of brainstem CMs, and 50% of spinal CMs. Forty-five CMs in 44 patients were surgically excised. Their follow-up ranged from 6 to 162 months (mean 47.2 months, SD \pm 53). All supratentorial CM patients showed improvement in their symptoms. Patients with preoperative seizure showed good seizure control with Engel scale I in 16 (94.1%) and Engel scale II in 1 (5.9%). In infratentorial (IT) and spinal CM patients, 92.3 and 66.7% had improvement in their neurodeficiencies, respectively. There was no mortality in our series.

CONCLUSION: Microsurgical excision of CNS CM results in excellent neurological outcome in pediatric patients. Early intervention is necessary in spinal CMs for better outcome.

DOI: 10.1007/s00381-017-3429-7

PMID: 28634821

113: Seth A. Management of IVC Thrombus-Surgical Strategies and Outcomes. *Indian J Surg Oncol.* 2017 Jun;8(2):156-159. doi: 10.1007/s13193-016-0583-4. Epub 2017 Jan 25. Review. PubMed PMID: 28546711; PubMed Central PMCID: PMC5427028.

Renal cell carcinoma is the most lethal among all urological cancers. The lethality increases with advancing stages of the disease. Renal tumors show a peculiar propensity to invade the venous system. Such invasion not only worsens the disease prognosis but also increases the surgical morbidity making treatment of such tumors challenging. Several small volume series have been published regarding management and outcomes of renal tumors with inferior vena cava (IVC) thrombus which show encouraging results when addressed properly. In this article, we review the outcomes and also describe the step-by-step approach to management of these tumors.

DOI: 10.1007/s13193-016-0583-4

PMCID: PMC5427028 [Available on 2018-06-01]

PMID: 28546711

114: Shah VD, Uddaraju M, Singh A, Das RR. Clinical Profile, Etiology, and Outcome of Infantile Ocular Trauma: A Developing Country Perspective. *Pediatr Emerg Care.* 2017 Jun 20. doi: 10.1097/PEC.0000000000001209. [Epub ahead of print] PubMed PMID: 28632575.

OBJECTIVE: The aim of this article was to study the clinical profile, etiology, and outcome of infantile ocular trauma in a developing country setting.

METHODS: A retrospective study on corneal trauma in infants (\leq 12 months old) was undertaken in a tertiary care hospital during a 2-year period. An analysis of clinical profile, etiology, microbiological profile, clinical course, and outcome was studied.

RESULTS: Seventy-six infants were included. Approximately 69% presented within 24 hours of injury. The common presentations were inability to open the eyelids, redness of eyes, and watering. Self-infliction by child's hand (49%) was found to be the main cause of corneal trauma. Corneal abrasion was seen in 34 cases (45%), isolated epithelial defects were seen in 30%, and infective keratitis was seen in

25%. Infection was found in 14 cases (fungal filaments in 7 and gram-positive cocci in 7). Only 36 infants followed up regularly in the hospital. All the infants following up in the hospital recovered in due course.

CONCLUSIONS: Infantile ocular trauma is a common morbidity that is underreported. Self-infliction by child's hand was found to be the main cause of corneal trauma. Cases presenting early and following up regularly till recovery have a favorable clinical course with good outcome. A high loss to follow-up indicates that awareness needs to be created among the caregivers.

DOI: 10.1097/PEC.0000000000001209

PMID: 28632575

115: Shakrawal J, Bali S, Sidhu T, Verma S, Sihota R, Dada T. Randomized Trial on Illuminated-Microcatheter Circumferential Trabeculotomy Versus Conventional Trabeculotomy in Congenital Glaucoma. *Am J Ophthalmol*. 2017 Aug;180:158-164. doi: 10.1016/j.ajo.2017.06.004. Epub 2017 Jun 15. PubMed PMID: 28624326.

PURPOSE: To compare 1-year outcomes of illuminated microcatheter-assisted circumferential trabeculotomy (IMCT) vs conventional partial trabeculotomy (CPT) for primary congenital glaucoma (PCG).

DESIGN: Randomized clinical trial.

METHODS: Forty eyes of 31 patients with unilateral or bilateral primary congenital glaucoma aged less than 2 years were randomized to undergo IMCT (20 eyes) or CPT (20 eyes). Primary outcome measure was intraocular pressure (IOP) reduction. The success criterion was defined as IOP \leq 12 mm Hg without and with antiglaucoma medications (absolute success and qualified success, respectively).

RESULTS: The mean age of our study population was 8.35 ± 1.2 months. The mean preoperative IOP was 24.70 ± 3.90 mm Hg in the IMCT group and 24.60 ± 3.31 mm Hg in the CPT group. Both groups were comparable with respect to preoperative IOP, corneal clarity, corneal diameter, vertical cup-to-disc ratio, and refractive error. In the IMCT group, 360-degree cannulation was achieved in 80% (16/20) of eyes. For the IMCT group and CPT groups, respectively, the absolute success rates were 80% (16/20) and 60% (12/20) ($P < .001$) and qualified success rates were 90% (18/20) and 70% (14/20) ($P < .001$). Both procedures produced a statistically significant reduction in IOP, and eyes undergoing IMCT achieved a lower IOP than CPT group eyes at 12 months follow-up (9.5 ± 2.4 mm Hg and 11.7 ± 2.1 mm Hg, respectively, $P < .001$).

CONCLUSION: In primary congenital glaucoma, illuminated microcatheter-assisted 360-degree circumferential trabeculotomy performed better than conventional partial trabeculotomy at 1 year follow-up and resulted in significantly lower IOP measurements.

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DOI: 10.1016/j.ajo.2017.06.004

PMID: 28624326 [Indexed for MEDLINE]

116: Sharma A, Kumar S, Sharma S. Vertebral artery from descending thoracic aorta: rare anatomic variant with diagnostic implication. *Acta Neurochir (Wien)*. 2017 Jun;159(6):1105-1106. doi: 10.1007/s00701-017-3175-3. Epub 2017 Apr 8. PubMed PMID: 28391445.

Variations of vertebral artery origins are rare and incidental. Anomalous bilateral vertebral arteries with right vertebral artery from descending thoracic aorta and normal bilateral subclavian arteries have not been reported in the literature so far. We report one such case in a cyanotic congenital heart disease patient, where its identification is of importance to avoid its inadvertent preoperative embolization, which can be catastrophic.

DOI: 10.1007/s00701-017-3175-3
PMID: 28391445

117: Sharma HB, Kailashiya J. The Anthropometric Correlates for the Physiological Demand of Strength and Flexibility: A study in Young Indian Field Hockey Players. *J Clin Diagn Res.* 2017 Jun;11(6):CC01-CC05. doi: 10.7860/JCDR/2017/26358.9965. Epub 2017 Jun 1. PubMed PMID: 28764148; PubMed Central PMCID: PMC5535341.

INTRODUCTION: Optimal strength and flexibility are essential for performance enhancement and injury prevention in hockey, and anthropometry is known to influence these parameters.

AIM: To find anthropometric correlates for strength and flexibility score in young Indian field hockey players.

MATERIALS AND METHODS: Thirteen female and 19 male subjects volunteered for the study. Selected anthropometric variables: lengths, breadths, girths and body composition; strength and sit and reach score were measured for each subject.

RESULTS: Males were taller, leaner and stronger with longer upper limbs and broader chests. With few exceptions, taller, heavier and leaner players with longer trunks and limbs, broader chest and hip, and bulkier arms and lower limbs had stronger grip, back, upper and lower limbs. Heavier and taller players with longer trunk and more percentage of body fat were more flexible. Also, the stronger players had more percentage body fat and body mass index, which might be due to the strong positive correlation of percentage body fat and body mass index with fat free mass.

CONCLUSION: Anthropometric variables, especially heights, breadths and body composition, show significant correlation with strength and flexibility, and hence may serve as monitoring tool and for talent identification.

DOI: 10.7860/JCDR/2017/26358.9965
PMCID: PMC5535341
PMID: 28764148

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119: Sharma P, Sagar R. Unfolding the genetic pathways of dyslexia in Asian population: A review. *Asian J Psychiatr.* 2017 Dec;30:225-229. doi: 10.1016/j.ajp.2017.06.006. Epub 2017 Jun 7. Review. PubMed PMID: 28619243.

Dyslexia also known as specific reading disorder is a complex heritable disorder with unexpected difficulty in learning to read and spell despite adequate intelligence, education, environment, and normal senses. Over past decades, researchers have attempted to characterize dyslexia neurobiological and genetic levels and unfold its pathophysiology. The genetic research on dyslexia has received attention in Asia from the last decade. Though limited by different constraints the studies from Asia have been able to gather significant evidence in this field. We present a review of studies of genetics in Asian population and suggest future directions.

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DOI: 10.1016/j.ajp.2017.06.006
PMID: 28619243

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121: Sharma S, Gupta DK. Varied facets of rectal atresia and rectal stenosis. *Pediatr Surg Int*. 2017 Aug;33(8):829-836. doi: 10.1007/s00383-017-4106-3. Epub 2017 Jun 10. PubMed PMID: 28601898.

Rectal atresia (RA) and rectal stenosis (RS) are rare anomalies with varied treatment options. A thorough literature review was done on reported cases/series of RA and RS. Based on evidence from cases managed over last 15 years, new insights into embryology were hypothesized. A comprehensive review was compiled with updated knowledge on diagnosis and management. RA is classified into five types I: II: III: IV: V as RS: RA with septal defect: RA with a fibrous cord between two atretic ends: RA with a gap: Multiple RA and/or RS. Current definitive surgical repair of these anomalies preserves the anal canal, dentate line, and sphincter complex. Most neonates with RA undergo sigmoid colostomy except few with RS who can rarely decompress adequately. Membranous RS and septal RA may seldom respond to dilatation or be amenable to transanal repair. Posterior sagittal anorectoplasty with an end-to-end/side repair is recommended for RA and most intramural RS. RS may be associated with a presacral mass and colonic/rectal motility disorders. The expected postoperative outcome is good if the normally developed anal sphincter complex is retained undamaged. Early recognition of the type of anomaly is necessary for appropriate management.

DOI: 10.1007/s00383-017-4106-3
PMID: 28601898

122: Sharma SK, Katoch K, Sarin R, Balambal R, Kumar Jain N, Patel N, Murthy KJR, Singla N, Saha PK, Khanna A, Singh U, Kumar S, Sengupta A, Banavaliker JN, Chauhan DS, Sachan S, Wasim M, Tripathi S, Dutt N, Jain N, Joshi N, Penmesta SRR, Gaddam S, Gupta S, Khamar B, Dey B, Mitra DK, Arora SK, Bhaskar S, Rani R. Efficacy and Safety of *Mycobacterium indicus pranii* as an adjunct therapy in Category II pulmonary tuberculosis in a randomized trial. *Sci Rep*. 2017 Jun 13;7(1):3354. doi: 10.1038/s41598-017-03514-1. PubMed PMID: 28611374; PubMed Central PMCID: PMC5469738.

Prolonged treatment of tuberculosis (TB) often leads to poor compliance, default and relapse, converting primary TB patients into category II TB (Cat IITB) cases, many of whom may convert to multi-drug resistant TB (MDR-TB). We have evaluated the immunotherapeutic potential of *Mycobacterium indicus pranii* (MIP) as an adjunct to Anti-Tubercular Treatment (ATT) in Cat II pulmonary TB (PTB) patients in a prospective, randomized, double blind, placebo controlled, multicentric clinical trial. 890 sputum smear positive Cat II PTB patients were randomized to receive either six intra-dermal injections (2+4) of heat-killed MIP at a dose of 5×10^8 bacilli or placebo once in 2 weeks for 2 months. Sputum smear and culture examinations were performed at different time points. MIP was safe with no adverse effects. While sputum smear conversion did not show any statistically significant difference, significantly higher number of patients (67.1%) in the MIP group achieved sputum culture conversion at fourth week compared to the placebo (57%) group ($p=0.0002$), suggesting a role of MIP in clearance of the bacilli. Since live bacteria are the major contributors for sustained incidence of TB, the potential of MIP in clearance of the bacilli has far reaching implications in controlling the spread of the disease.

DOI: 10.1038/s41598-017-03514-1
PMCID: PMC5469738
PMID: 28611374

123: Sharma V, Gupta N, Srivastava N, Rana V, Chandna P, Yadav S, Sharma A. Diagnostic potential of inflammatory biomarkers in early childhood caries - A case control study. *Clin Chim Acta*. 2017 Aug;471:158-163. doi: 10.1016/j.cca.2017.05.037. Epub 2017 Jun 1. PubMed PMID: 28579141.

BACKGROUND: Early Childhood Caries (ECC) is most common chronic infectious disease of childhood. Diagnosis of dental caries has been limited to clinical, visual and radiographic methods but its inflammatory component remained unexplored. Hence, this study aims to evaluate salivary levels of inflammatory cytokines in children with ECC to assess their potential as non-invasive biomarkers.

METHODS: 50 subjects were recruited (25 ECC patients and 25 healthy children). Saliva samples were taken from all subjects and collected again from patients after rehabilitative intervention. Levels of IL-6, IL-8 and TNF- α were determined using ELISA. Cytokines level were statistically correlated with each other and with DMF score along with ROC curve analysis.

RESULTS: Salivary levels of IL-6, IL-8 & TNF- α were significantly higher in patients which got significantly reduced after rehabilitative intervention. Levels of these cytokines were significantly associated with severity of dental caries. These cytokines were correlating with each other along with DMF score upon Spearman correlation. ROC curve reveals optimum sensitivity and specificity of these cytokines for diagnosis in ECC with absolute levels observed for IL-6.

CONCLUSIONS: Significant elevation of IL-6, IL-8 and TNF- α with optimum sensitivity and specificity might imply their involvement as potential non-invasive diagnostic/prognostic markers in ECC.

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DOI: 10.1016/j.cca.2017.05.037
PMID: 28579141

124: Sikary AK, Mridha AR, Behera C. Sudden death of a child due to pyogenic bacterial myocarditis. *Med Leg J*. 2017 Jun;85(2):105-107. doi: 10.1177/0025817216682187. Epub 2017 Jan 24. PubMed PMID: 27899697.

Bacterial myocarditis is an uncommon condition and only a few fatal cases in adults are reported in the scientific literature. Death from acute bacterial myocarditis in children is extremely rare. We report an unusual case of fatal bacterial myocarditis in a seven-year-old girl, who had a history of cough for a month and fever for two days. She was given symptomatic treatment by a local physician without suspecting her clinical condition. Her condition rapidly deteriorated and she was brought in dead to the hospital. Autopsy revealed pyogenic bacterial myocarditis associated with bilateral lobar pneumonia caused by Gram-positive cocci. Death from bacterial myocarditis can be prevented by early diagnosis and appropriate antibiotics.

DOI: 10.1177/0025817216682187
PMID: 27899697

125: Singh A, Sen S, Vanathi M, Tandon R. Corneal keloid with cystoid cicatrix:post-small-incision cataract surgery. *Can J Ophthalmol*. 2017 Jun;52(3):e93-e95. doi: 10.1016/j.jcjo.2016.11.013. Epub 2017 Jan 12. PubMed PMID: 28576228.

126: Singh A, Purohit BM. Exploring patient satisfaction levels, self-rated oral health status and associated variables among citizens covered for dental insurance through a National Social Security Scheme in India. *Int Dent J*. 2017 Jun;67(3):172-179. doi: 10.1111/idj.12285. Epub 2017 Apr 17. PubMed PMID: 28417462.

OBJECTIVE: To assess patient satisfaction, self-rated oral health and associated factors, including periodontal status and dental caries, among patients covered for dental insurance through a National Social Security Scheme in New Delhi, India.

METHOD: A total of 1,498 patients participated in the study. Satisfaction levels and self-rated oral-health scores were measured using a questionnaire comprising 12 closed-ended questions. Clinical data were collected using the Community Periodontal Index (CPI) and the decayed, missing and filled teeth (DMFT) index. Regression analysis was conducted to evaluate factors associated with dental caries, periodontal status and self-rated oral health.

RESULTS: Areas of concern included poor cleanliness within the hospital, extensive delays for appointments, waiting time in hospital and inadequate interpersonal and communication skills among health-care professionals. Approximately 51% of the respondents rated their oral health as fair to poor. Younger age, no tobacco usage, good periodontal status and absence of dental caries were significantly associated with higher oral health satisfaction, with odds ratios of 3.94, 2.38, 2.58 and 2.09, respectively ($P \leq 0.001$).

CONCLUSION: The study indicates poor satisfaction levels with the current dental care system and a poor self-rated oral health status among the study population. Some specific areas of concern have been identified. These findings may facilitate restructuring of the existing dental services under the National Social Security Scheme towards creating a better patient care system.

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DOI: 10.1111/idj.12285
PMID: 28417462

127: Singh Balhara YP, Kalra S. Drug addiction and diabetes: South Asian action. *J Pak Med Assoc*. 2017 Jun;67(6):954-956. PubMed PMID: 28585604.

Both diabetes and drug addiction are common phenomena across the world. Drug abuse impacts glycaemic control in multiple ways. It becomes imperative, therefore, to share guidance on drug deaddiction in persons with diabetes. The South Asian subcontinent is home to specific forms and patterns of drug abuse. Detailed study is needed to ensure good clinical practice regarding the same. This communication provides a simple and pragmatic framework to address this issue, while calling for concerted action on drug deaddiction in South Asia.

PMID: 28585604

128: Singh G, Kapil U, Sati HC. Physical Activity Level Amongst Rural Children Aged 12-18 years in Kullu District, Himachal Pradesh. *Indian J Pediatr*. 2017 Jun;84(6):485-486. doi: 10.1007/s12098-017-2317-1. Epub 2017 Mar 9. PubMed PMID: 28281212.

129: Singh HN, Scheiber-Mojdehkar B, Rajeswari MR. DNA trinucleotide (GAA) repeats in human genome: hint for disease pathogenesis? *J Biomol Struct Dyn*. 2017

Jun 23:1-8. doi: 10.1080/07391102.2017.1341336. [Epub ahead of print] PubMed PMID: 28605995.

130: Singh M, Thakral D, Kar HK, Rishi N, Sharma PK, Mitra DK. Distinct clinico-immunological profile of patients infected with human papilloma virus genotypes 6 and 11. *Virusdisease*. 2017 Jun;28(2):200-204. doi: 10.1007/s13337-017-0370-z. Epub 2017 May 20. PubMed PMID: 28770246; PubMed Central PMCID: PMC5510631.

Anogenital warts are primarily caused by Human Papillomavirus (HPV) type 6 and 11, which belong to the taxonomic family Papillomaviridae, genus alpha-papillomavirus and species 10. The presentation of the warts is varied and most of the patients have high recurrence rate of wart lesions. Studies had shown that an effective cellular immune response is required for the control of HPV infection. Here, we report distinct clinico-immunological profile of two patients presenting with venereal warts caused by HPV genotypes 6 and 11. The Case 1 manifested greater number of verrucous warts and case 2 had fewer subtle lesions. Further, evaluation of HPV antigen-specific cellular immune response revealed a robust T cell response against HPV6 peptide and a weak response against HPV11 in case 1. Interestingly, HPV genotyping revealed type 6 in case 1 with greater severity of infection and robust immune response against HPV6 peptide. In contrast, case 2 presented with milder infection and weak immune response and was positive for genotype 11. More extensive study with larger cohorts will strengthen our observation and could be relevant for designing immunotherapeutic adjunct strategies along with the standard treatment for rapid clearance of HPV infections in these patients. This communication reports immune status of two patients with venereal warts and their correlation with clinical presentation and the genotyping.

DOI: 10.1007/s13337-017-0370-z
PMCID: PMC5510631 [Available on 2018-06-01]
PMID: 28770246

131: Singh M, Thakral D, Rishi N, Kar HK, Mitra DK. Functional characterization of CD4 and CD8 T cell responses among human papillomavirus infected patients with ano-genital warts. *Virusdisease*. 2017 Jun;28(2):133-140. doi: 10.1007/s13337-017-0382-8. Epub 2017 Jun 13. PubMed PMID: 28770238; PubMed Central PMCID: PMC5510633.

Ano-genital warts are considered one of the commonest and highly infectious sexually transmitted infections. These warts are primarily caused by the human papillomavirus (HPV) of the family Papillomaviridae, genus alpha-papillomavirus, species 10 and types 6 and 11. However the high recurrence rate of warts is a matter of serious concern to the patients and a challenge for the treating physician. The conventional treatment options are targeted only to the local site of warts. There is no systemic treatment modality as there is limited understanding of the disease immune-pathogenesis. The role of cell-mediated immunity in combating HPV infection is not clearly defined. Hence the present study is aimed at investigating the CD4+ T helper (Th1 and Th2) and CD8+ T cell responses among wart patients. In this study, we compared HPV6 and HPV11 antigen-specific T cell responses among venereal wart patients relative to healthy controls. Significant decrease in percent frequencies of IFN- γ producing CD4+ and CD8+ T cells were observed in HPV infected wart patients. On the other hand, the frequency of CD4+ T cells expressing IL-4 was significantly increased in these patients as compared to healthy controls. The observed functional skewing of HPV specific T cells from Th1 to Th2 response in patients indicated suppressed immunity against the HPV. Moreover, decrease in CD8 T cell function

correlated with poor wart clearance. Our findings open future avenues for exploring potential immunomodulation strategies as an adjunct to standard treatment for better management of these patients and prevention of recurrence.

DOI: 10.1007/s13337-017-0382-8

PMCID: PMC5510633 [Available on 2018-06-01]

PMID: 28770238

132: Sinha A, Singh V, Yadav S. Multi-omics and male infertility: status, integration and future prospects. *Front Biosci (Schol Ed)*. 2017 Jun 1;9:375-394. Review. PubMed PMID: 28410125.

Within the cell, gene expression analysis is the key to gain information about different cellular and physiological events. The multifaceted route of fertilization is a combination of different processes, which include production, maturation and ejaculation of the sperm, its travel through the female genital tract, followed by the ultimate fusion of the fertile sperm with the egg. Early embryogenesis and gametogenesis as well as gene expression at tissue level and global gene silencing are under different levels of stringent epigenetic checks. Moreover, transcriptome (expressed segment of the genome in form of RNA) and the proteome (expressed set of genomic proteins) contribute uniformly to the overall cellular gene expression. In both normal and pathophysiological environments, this gene expression is altered across various levels viz., genome variations, post-transcriptional modifications, protein expression and post translational modifications. Consequently, more informative conclusions can be drawn through a new 'omics' approach of system biology, which takes into account all the genomics, epigenomics, proteomics, and metabolomics findings under one roof, thus computing the alterations in all the entities (genes, proteins, metabolites) concurrently.

PMID: 28410125 [Indexed for MEDLINE]

133: Sinha A, Goel L, Ranjan R, Gaba S, Kumar A. Atraumatic Acute Compartment Syndrome of Forearm Following Artificial Mehndi (Henna) Dermatitis - A Rare Case Report. *J Clin Diagn Res*. 2017 Jun;11(6):RD01-RD03. doi: 10.7860/JCDR/2017/27708.10096. Epub 2017 Jun 1. PubMed PMID: 28764255; PubMed Central PMCID: PMC5535445.

Atraumatic compartment syndrome of the forearm is a rare entity. There are several papers available in the literature on the adverse effects of mehndi application; however Acute Compartment Syndrome (ACS) following mehndi application has never been reported. We present the case of a 25-year-old female, who presented with sudden onset swelling and pain in the left forearm. The patient had applied mehndi all over her left palm and forearm just two days prior to presentation. The patient had stretch pain and other clinical features suggestive of compartment syndrome of forearm and was hence taken up for an emergency fasciotomy. The fasciotomy wound healed without skin grafting and the patient achieved near normal range of movement of the affected elbow, wrist and fingers.

DOI: 10.7860/JCDR/2017/27708.10096

PMCID: PMC5535445

PMID: 28764255

134: Somasundaram V, Tevatia MS, Purohit A, Ahuja A, Mahapatra M, Tyagi S, Pati H, Saxena R. Evaluation of Bone Marrow Microvessel Density in Patients with

Aplastic Anemia. Indian J Hematol Blood Transfus. 2017 Jun;33(2):169-174. doi: 10.1007/s12288-016-0707-6. Epub 2016 Jul 19. PubMed PMID: 28596646; PubMed Central PMCID: PMC5442054.

Bone marrow microenvironment plays a crucial role in the growth of hemopoietic cells and bone marrow function, which in turn depends on an intact microvasculature. Our study assesses the microvessel density (MVD) in the bone marrow of aplastic anemia (AA) patients, compares with MVD of controls and MVD among the different types of AA. Bone marrow specimens from 60 patients with AA and 17 controls were studied. There were 33 patients with non severe AA (NSAA), 12 patients with severe AA (SAA) and 15 patients with very severe AA (VSAA). MVD was calculated on sections stained immunohistochemically for CD34. The mean bone marrow MVD in AA group was 1.28 ± 0.36 , being significantly lower than that in control group (6.80 ± 1.59 , $p < 0.001$). MVD of SAA and NSAA patients were 1.16 ± 0.35 and 1.49 ± 0.27 , respectively, being significantly different ($p = 0.003$). MVD of VSAA was 0.93 ± 0.25 and the difference with NSAA is significant, however there was no significant difference between SAA and VSAA. Bone marrow MVD is low in AA patients and is likely to have a role in pathophysiology of bone marrow failure. Proangiogenic agents together with specific therapy might accelerate the recovery of hematopoiesis in AA patients.

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PMCID: PMC5442054 [Available on 2018-06-01]
PMID: 28596646

135: Sondhi P, Mahajan R, Arava S. Annular itchy rash in a woman with chronic pancreatitis. Clin Exp Dermatol. 2017 Oct;42(7):811-813. doi: 10.1111/ced.13143. Epub 2017 Jun 7. PubMed PMID: 28590014.

136: Sood R, Sharma GP, Gupta NP. THE ILEAL NEOBLADDER - AN IDEAL BLADDER SUBSTITUTE? Med J Armed Forces India. 1996 Apr;52(2):67-70. doi: 10.1016/S0377-1237(17)30845-6. Epub 2017 Jun 26. PubMed PMID: 28769347; PubMed Central PMCID: PMC5530306.

The ileal neobladder was evaluated on 5 patients following radical cystoprostatectomy. All the patients made good post-operative recovery. Complete day and night continence was achieved in all by the third month. Bladder capacities ranged between 475 mL and 690 mL and the residual volumes between 23 mL and 65 mL at 3 months. The neobladder pressures were below 35 mm of water. Ultrasound scanning and intravenous urography showed no signs of obstruction or reflux in the upper tracts.

DOI: 10.1016/S0377-1237(17)30845-6
PMCID: PMC5530306
PMID: 28769347

137: Subhadarshani S, Gupta V, Chahal A, Verma KK. Saddle-nose and bilateral cauliflower ear deformities with pyoderma gangrenosum-like ulcers, cavitory pulmonary lesions, digital gangrene and pulselessness in a young female. BMJ Case Rep. 2017 Jun 15;2017. pii: bcr-2017-220434. doi: 10.1136/bcr-2017-220434. PubMed PMID: 28619741.

We report a young female who presented with saddle-nose and bilateral cauliflower ear deformities along with pyoderma gangrenosum-like ulcers, digital gangrene and pulselessness. Subsequently, she was found to have bilateral conductive hearing loss, a corneal opacity, mild aortic regurgitation and radiological evidence of cavitory changes in lungs and aortoarteritis. Our patient had a constellation of

symptoms which posed a diagnostic challenge. Finally, a diagnosis of relapsing polychondritis with several unusual features was made. Overlap with Takayasu's arteritis and granulomatosis with polyangiitis, which has been reported rarely in the literature, cannot be excluded.

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DOI: 10.1136/bcr-2017-220434

PMID: 28619741

Conflict of interest statement: Competing interests: None declared.

138: Sultania M, Kataria K, Srivastava A, Misra MC, Parshad R, Dhar A, Hari S, Thulkar S. Validation of Different Techniques in Physical Examination of Breast. *Indian J Surg.* 2017 Jun;79(3):219-225. doi: 10.1007/s12262-016-1470-5. Epub 2016 Apr 4. PubMed PMID: 28659675; PubMed Central PMCID: PMC5473793.

The majority of patients attending breast clinics are found to be suffering from benign conditions. The detailed investigations of every patient would add to the cost of care and burden the laboratories. A detailed clinical evaluation might limit the use of thorough investigations for suspicious lesions only. This cross sectional study involved the patients with various benign and malignant conditions of breast, who attended outpatient clinic and surgical ward at All India Institute of Medical Sciences, New Delhi from June 2009 to May 2011. The study started with a training of the resident (observer 2) in various breast examination techniques by a professor of surgery (observer 1), who was well trained in the discipline of breast surgery by internationally renowned breast experts. The different techniques of breast examination were validated after calculation of intra and inter-observer variation. Excellent agreement was observed between both the observers. The diagnostic accuracy ratio for most variables ranges from 0.9 to 1. The dimpling of skin on inspection had a low kappa (coefficient of agreement=0.48) and consistency of lymph node on palpation had a kappa 0.38. All other variables showed high agreement. The present study was successful in training the resident and validating the different techniques in physical examination of breast.

DOI: 10.1007/s12262-016-1470-5

PMCID: PMC5473793 [Available on 2018-06-01]

PMID: 28659675

139: Talwar S, Gupta A, Nehra A, Makhija N, Kapoor PM, Sreenivas V, Choudhary SK, Airan B. Bidirectional superior cavopulmonary anastomosis with or without cardiopulmonary bypass: A randomized study. *J Card Surg.* 2017 Jun;32(6):376-381. doi: 10.1111/jocs.13149. Epub 2017 May 21. PubMed PMID: 28543642.

OBJECTIVES: This study aims to compare the bidirectional superior cavopulmonary anastomosis (BDG) with or without cardiopulmonary bypass (CPB).

METHODS: 100 patients undergoing BDG were randomized into two groups: Off-CPB or on-CPB groups. All patients underwent near-infrared spectrophotometry (NIRS) and bispectral index (BIS) monitoring and pre- and postoperative serum 100 beta protein measurements (S β 100) and neuro-cognitive evaluation. Postoperative intensive care unit (ICU) parameters were also studied.

RESULTS: The median age of patients in the on-CPB and off-CPB group were 42 and 48 months, respectively (p=0.11). Median weights in the on-CPB group and off-CPB group were 13.5 (5-50) kg and 15 (7-36) kg, respectively (p=0.927).

There was a significant rise in superior vena cava (SVC) pressure on SVC clamping in the off-CPB group (23.12 ± 6.84 vs 2.98 ± 2.22 mmHg) on-CPB group ($p < 0.001$). There was a significant fall in NIRS and BIS values from baseline in the off-CPB group during the anastomosis but there was no statistically significant change in serum S β 100 from pre-clamp to post-clamp in either group. Inotropic support, duration of ventilation, ICU stay, and hospital stay were significantly less in the off-CPB group ($p < 0.001$). Assessment of Social Adaptive Functioning revealed no adverse sequelae. There were significant cost savings if surgery was performed off-CPB ($p < 0.001$).

CONCLUSION: Off CPB-BDG is an economical and safe procedure. Duration of inotropic and mechanical ventilatory support, ICU, and hospital stay is significantly less. We did not observe any early adverse neurologic sequelae in patients undergoing off-CPB BDG.

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PMID: 28543642 [Indexed for MEDLINE]

140: Talwar S, Anand A, Gupta SK, Ramakrishnan S, Kothari SS, Saxena A, Juneja R, Choudhary SK, Airan B. Resection of subaortic membrane for discrete subaortic stenosis. *J Card Surg.* 2017 Jul;32(7):430-435. doi: 10.1111/jocs.13160. Epub 2017 Jun 13. PubMed PMID: 28609808.

BACKGROUND: We reviewed the long-term results of surgery for discrete subaortic membrane (SubAM) from a single institute.

METHODS: A retrospective review of medical records of all patients ($n=146$) who underwent resection of a SubAM for discrete subaortic stenosis between 1990 and 2015 at the All India Institute of Medical Sciences, New Delhi, India was undertaken.

RESULTS: Median age at surgery was 9.0 years (9 months-47 years). There was one early death. Preoperative peak left ventricular outflow tract (LVOT) Doppler gradient was 83.4 ± 26.2 mmHg (range: 34-169 mmHg). On preoperative echocardiography, aortic regurgitation (AR) was absent in 69 (47.3%), mild in 35 (24%), moderate in 30 (20.5%), and severe in 12 (8.2%). After surgery, the LVOT gradient was reduced to 15.1 ± 6.2 mmHg ($P < 0.001$). Fourteen patients (9.6%) who had residual/recurrent significant gradients are currently being followed-up or awaiting surgery. There was improvement in AR for operated patients with freedom from AR of $92.6 \pm 0.03\%$ at 15 years. Kaplan-Meier survival at 25 years was $93.0 \pm 3.9\%$ (95% confidence interval: 79.6, 97.7). Freedom from re-operation at 25 years was $96.9 \pm 1.8\%$.

CONCLUSIONS: Long-term results of surgery for discrete SubAM are good. Resection of the membrane along with septal myectomy decreases the risk of recurrence.

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DOI: 10.1111/jocs.13160

PMID: 28609808 [Indexed for MEDLINE]

141: Titiyal JS, Agarwal E, Angmo D, Sharma N, Kumar A. Comparative evaluation of outcomes of phacoemulsification in vitrectomized eyes: silicone oil versus air/gas group. *Int Ophthalmol.* 2017 Jun;37(3):565-574. doi: 10.1007/s10792-016-0305-5. Epub 2016 Aug 2. PubMed PMID: 27486022.

The purpose of this study is to comparatively evaluate the morphology of cataract, intraoperative and postoperative complications (IPC), and surgical outcomes of phacoemulsification in post 23G vitrectomized eyes in silicone oil

versus air/gas group. This prospective interventional clinical study took place in the Dr. RP Centre for Ophthalmic Sciences, AIIMS, New Delhi, India. Eighty-nine eyes of 89 consecutive vitrectomized patients with cataract were included. All underwent phacoemulsification and evaluated for cataract morphology, surgical difficulties, IPC, visual acuity, and specular count. Mean age of patients was 50.24 ± 15.19 years. There were 65 males and 24 females and 48 eyes in silicone oil group and 41 in air/gas group. Combination type was the commonest morphology seen in both silicone oil (52.08 %) and air/gas group (70.33 %) followed by posterior subcapsular cataract (PSC) in 31.25 % silicone group and 12.2 % air/gas group. Posterior capsular plaque (PCP) was seen in 41.67 % of silicone oil versus 7.32 % air/gas group; $p < 0.005$. Pupillary abnormalities were significantly more in oil (31.25 %) than in air/gas group (9.76 %); $p = 0.014$. Mean duration between vitrectomy and phacoemulsification in oil group versus air/gas group was 8.39 ± 4.7 months and 10.9 ± 5.22 months, respectively; $p < 0.005$. Mean postoperative logMAR visual acuity was better in air/gas (0.43 ± 0.25) than in oil (0.66 ± 0.29) group, $p < 0.005$. There was no significant difference in mean endothelial cell loss postoperatively in either groups ($p = 0.25$). Morphology of cataract differs in the two groups with PSC being more common in oil group. The mean time of cataract onset was significantly less in patients with oil group, and poor visual outcome in oil group may be attributable to the increased PCP noted.

DOI: 10.1007/s10792-016-0305-5

PMID: 27486022 [Indexed for MEDLINE]

142: Tomar A, Vasisth S, Khan SI, Malik S, Nag TC, Arya DS, Bhatia J. Galangin ameliorates cisplatin induced nephrotoxicity in vivo by modulation of oxidative stress, apoptosis and inflammation through interplay of MAPK signaling cascade. *Phytomedicine*. 2017 Oct 15;34:154-161. doi: 10.1016/j.phymed.2017.05.007. Epub 2017 Jun 15. PubMed PMID: 28899498.

BACKGROUND AND PURPOSE: Cisplatin is a widely used chemotherapeutic agent but now-a-days its usage is limited in clinical chemotherapy because of its severe nephrotoxic effect on renal tissues. Galangin, a flavonoid obtained from ginger family has been demonstrated to have antioxidant, anti-apoptotic and anti-inflammatory properties. This study is aimed to investigate the possible ameliorative effect of galangin in a rodent model of cisplatin-induced nephrotoxicity.

MATERIAL AND METHODS: Adult male albino wistar rats were divided into six groups ($n=6$) viz normal, cisplatin-control, galangin (25, 50 and 100mg/kg p.o.) and per se (100mg/kg galangin, p.o.). Galangin was administered orally to the rats for a period of 10 days. On the 7th day of the treatment, nephrotoxicity was induced in all the groups by a single dose of cisplatin (8mg/kg, i.p.) (except normal and per se group). On the 11th day, the rats were anaesthetized and blood was withdrawn via direct heart puncture for biochemical estimation. Rats were sacrificed and kidneys were isolated and preserved for evaluation of histopathological, ultra structural immunohistochemical studies and western blot analysis.

RESULTS: Cisplatin significantly impaired renal function and increased oxidative stress and inflammation. It also increased expression of pro-apoptotic proteins Bax and caspase-3 and decreased the expression of the anti-apoptotic protein Bcl-2. Histological and ultrastructural findings were also supportive of renal tubular damage. Pretreatment with galangin (100mg/kg p.o.) preserved renal function, morphology, suppressed oxidative stress, inflammation and the activation of apoptotic pathways. TUNEL assay showed decreased DNA fragmentation on galangin pre-treatment. Furthermore, galangin (100mg/kg) pre-treatment also reduced the expression of NF κ B along with proteins MAPK pathway i.e. p38, JNK and ERK1/2.

CONCLUSION: In conclusion, Galangin (100mg/kg, p.o.) significantly ameliorated cisplatin induced nephrotoxicity by suppressing MAPK induced inflammation and apoptosis.

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PMID: 28899498

143: Tripathi M, Bansal A, Baghel V, Kumar P, Bal C. F-18 FDG and F-18 Tau PET in posterior cortical atrophy. *Eur J Nucl Med Mol Imaging*. 2017 Sep;44(10):1779-1780. doi: 10.1007/s00259-017-3738-9. Epub 2017 Jun 6. PubMed PMID: 28584971.

144: Urkude JS, Pujari A, Chaniyara M, Singh R. Giant iridodialysis with wound dehiscence following penetrating keratoplasty: an ocular emergency. *BMJ Case Rep*. 2017 Jun 13;2017. pii: bcr-2017-220753. doi: 10.1136/bcr-2017-220753. PubMed PMID: 28611140.

145: Vatsa R, Bharti J, Roy KK, Kumar S, Sharma JB, Singh N, Singhal S, Meena J. Evaluation of amnion in creation of neovagina in women with Mayer-Rokitansky-Kuster-Hauser syndrome. *Fertil Steril*. 2017 Aug;108(2):341-345. doi: 10.1016/j.fertnstert.2017.05.026. Epub 2017 Jun 16. PubMed PMID: 28624115.

OBJECTIVE: To assess the outcome of amnion vaginoplasty in cases of vaginal agenesis due to Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome managed at the authors' institution.

DESIGN: Retrospective study.

SETTING: Tertiary care hospital.

PATIENT(S): Fifty women with MRKH who underwent neovaginoplasty.

INTERVENTION(S): Modified McIndoe's vaginoplasty was done in all the patients, using human amnion graft.

MAIN OUTCOME MEASURE(S): Functional status assessed by Female Sexual Function Index, anatomic status (length and width of neovagina), and epithelialization of vagina.

RESULT(S): Mean (\pm SD) vaginal length after surgery was 8.2 ± 1 cm. Mean vaginal length at 6-month follow-up in sexually active patients was significantly longer as compared with the patients who were not sexually active after surgery (8.4 ± 1.04 cm vs. 6.6 ± 2.4 cm). Mean Female Sexual Function Index score was 30.8 ± 2.1 . Vaginal biopsy showed complete epithelialization of vaginal mucosa.

CONCLUSION(S): In a developing nation like India, McIndoe's method with amnion graft seems to be a promising option owing to its low cost, easy availability, and safety, ease of the procedure not requiring any special instrument, physiologic outcome with respect to epithelialization of the vagina without hair growth, and satisfying functional outcome.

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DOI: 10.1016/j.fertnstert.2017.05.026

PMID: 28624115 [Indexed for MEDLINE]

146: Venkatesh P. Bariatric surgery, glycaemic status, and microvascular complications. *Lancet Diabetes Endocrinol*. 2017 Jun;5(6):415-416. doi: 10.1016/S2213-8587(17)30144-4. PubMed PMID: 28549502.

147: Vitola JV, Mut F, AlexÃ¡nderson E, Pascual TNB, Mercuri M, Karthikeyan G, Better N, Rehani MM, Kashyap R, Dondi M, Paez D, Einstein AJ; INCAPS Investigators Group. Opportunities for improvement on current nuclear cardiology practices and radiation exposure in Latin America: Findings from the 65-country IAEA Nuclear Cardiology Protocols cross-sectional Study (INCAPS). *J Nucl Cardiol*. 2017 Jun;24(3):851-859. doi: 10.1007/s12350-016-0433-3. Epub 2016 Feb 22. PubMed PMID: 26902484.

BACKGROUND: Comparison of Latin American (LA) nuclear cardiology (NC) practice with that in the rest of the world (RoW) will identify areas for improvement and lead to educational activities to reduce radiation exposure from NC.

METHODS AND RESULTS: INCAPS collected data on all SPECT and PET procedures performed during a single week in March-April 2013 in 36 laboratories in 10 LA countries (n = 1139), and 272 laboratories in 55 countries in RoW (n = 6772). Eight "best practices" were identified a priori and a radiation-related Quality Index (QI) was devised indicating the number used. Mean radiation effective dose (ED) in LA was higher than in RoW (11.8 vs 9.1 mSv, p < 0.001). Within a populous country like Brazil, a wide variation in laboratory mean ED was found, ranging from 8.4 to 17.8 mSv. Only 11% of LA laboratories achieved median ED <9 mSv, compared to 32% in RoW (p < 0.001). QIs ranged from 2 in a laboratory in Mexico to 7 in a laboratory in Cuba. Three major opportunities to reduce ED for LA patients were identified: (1) more laboratories could implement stress-only imaging, (2) camera-based methods of ED reduction, including prone imaging, could be more frequently used, and (3) injected activity of ^{99m}Tc could be adjusted reflecting patient weight/habitus.

CONCLUSIONS: On average, radiation dose from NC is higher in LA compared to RoW, with median laboratory ED <9 mSv achieved only one third as frequently as in RoW. Opportunities to reduce radiation exposure in LA have been identified and guideline-based recommendations made to optimize protocols and adhere to the "as low as reasonably achievable" (ALARA) principle.

DOI: 10.1007/s12350-016-0433-3

PMID: 26902484

148: Wari MN, Vallonthaiel AG, Ahmed A, Saxena D, Iyer VK, Mathur SR, Agarwala S, Bakhshi S, Srinivas V, Chattopadhyaya P, Sharma A, Gupta SD, Dinda A. Glypican-3 mRNA expression level in Wilms tumor: correlation with histological type, stage, and outcome. *Pediatr Surg Int*. 2017 Jun;33(6):695-703. doi: 10.1007/s00383-017-4087-2. Epub 2017 Apr 21. PubMed PMID: 28432433.

PURPOSE: To correlate expression of Glypican-3 in Wilms tumor with histopathology, stage, and outcome.

METHODS: Glypican-3 mRNA expression by real-time PCR on tumor and normal germline samples from 75 fresh nephrectomies for Wilms tumor with fold change after normalization against GAPDH was compared. Survival analysis for event-free and overall survival (EFS, OS) with 2-year follow-up for Glypican-3 overexpression (>1.5 times) and clinicopathological parameters was performed.

RESULTS: Glypican-3 was overexpressed in 37/75 (49.3%). It was overexpressed in 77% (10/13) cases with blastema predominance or anaplastic histology, as compared to 44% of other histologies (27/62) (p = 0.03). OS was 73 and 93%, respectively (p = 0.016), for those with and without GPC-3 overexpression. EFS was not significantly different with Glypican-3 overexpression (p = 0.11). All 5 deaths among blastema predominant tumors and 4/5 deaths among triphasic tumors had overexpressed Glypican-3. Most deaths in Stage IV, Stage III, and Stage I + II (5/7, 3/3, 1/1) had GPC-3 overexpression. On multivariate analysis, only histology and stage were found to have independent prognostic value.

CONCLUSION: Glypican-3 overexpression in Wilms tumor correlates with poor OS on

univariate analysis. However, only histology and stage have independent prognostic value. Glypican-3 levels may help to stratify intermediate outcome histology (triphasic) and Stage III Wilms tumors.

DOI: 10.1007/s00383-017-4087-2

PMID: 28432433

149: Yadav DK, Kumar S, Saloni, Singh H, Kim MH, Sharma P, Misra S, Khan F. Molecular docking, QSAR and ADMET studies of withanolide analogs against breast cancer. *Drug Des Devel Ther.* 2017 Jun 22;11:1859-1870. doi: 10.2147/DDDT.S130601. eCollection 2017. PubMed PMID: 28694686; PubMed Central PMCID: PMC5491705.

Withanolides are a group of pharmacologically active compounds present in most prodigal amounts in roots and leaves of *Withania somnifera* (Indian ginseng), one of the most important medicinal plants of Indian traditional practice of medicine. Withanolides are steroidal lactones (highly oxygenated C-28 phytochemicals) and have been reported to exhibit immunomodulatory, anticancer and other activities. In the present study, a quantitative structure activity relationship (QSAR) model was developed by a forward stepwise multiple linear regression method to predict the activity of withanolide analogs against human breast cancer. The most effective QSAR model for anticancer activity against the SK-Br-3 cell showed the best correlation with activity ($r^2=0.93$ and $r_{CV2}=0.90$). Similarly, cross-validation regression coefficient ($r_{CV2}=0.85$) of the best QSAR model against the MCF7/BUS cells showed a high correlation ($r^2=0.91$). In particular, compounds CID_73621, CID_435144, CID_301751 and CID_3372729 have a marked antiproliferative activity against the MCF7/BUS cells, while 2,3-dihydrowithaferin A-3-beta-O-sulfate, withanolide 5, withanolide A, withaferin A, CID_10413139, CID_11294368, CID_53477765, CID_135887, CID_301751 and CID_3372729 have a high activity against the Sk-Br-3 cells compared to standard drugs 5-fluorouracil (5-FU) and camptothecin. Molecular docking was performed to study the binding conformations and different bonding behaviors, in order to reveal the plausible mechanism of action behind higher accumulation of active withanolide analogs with β -tubulin. The results of the present study may help in the designing of lead compound with improved activity.

DOI: 10.2147/DDDT.S130601

PMCID: PMC5491705

PMID: 28694686

Conflict of interest statement: Disclosure The authors report no conflicts of interest in this work.

150: Yadav HK, Yadav RK, Chandra A, Tikku AP. A Scanning Electron Microscopic Evaluation of the Effectiveness of Etidronic Acid, SmearClear and MTAD in Removing the Intra canal Smear Layer. *J Dent (Shiraz).* 2017 Jun;18(2):118-126. PubMed PMID: 28620636; PubMed Central PMCID: PMC5457522.

STATEMENT OF THE PROBLEM: Root canal therapy should not simply be the extirpation of the pulp and widening of the canal. But one should also focus on how to completely remove the loosely-attached smear layer because it has adverse effects on the final outcome of the treatment.

PURPOSE: This study compared the efficacy of Etidronic acid, SmearClear and MTAD to remove the smear layer created during instrumentation in different regions of the root canal.

MATERIALS AND METHOD: Fifty single-rooted mandibular premolars were decoronated from the cemento-enamel junction and instrumented using the ProTaper universal rotary file system along with copious irrigation by 1.0% sodium hypochlorite and distilled water. On the basis of the type of chelating agent used for irrigation,

samples (n=10) were then randomized into five groups as: Group I- 9% etidronic acid, Group II- 18% etidronic acid, Group III- SmearClear, Group IV- MTAD and Group V- normal saline. Subsequent to irrigation, all samples were rinsed, dried and sectioned longitudinally for evaluation of the smear layer removal under scanning electron microscope (2000X). Data were statistically analyzed by two-way analysis of variance and Tukey's post hoc test with statistical significance set at $p < 0.5$.

RESULTS: The result showed that SmearClear was the most efficient in removing the smear layer. However, etidronic acid was found inferior than both SmearClear and MTAD.

CONCLUSION: Chelators are essential for complete smear layer removal in association with organic solvent.

PMCID: PMC5457522

PMID: 28620636

151: Yadav S, Singh A, Tandon R. Folds in Descemet Membrane Associated With Forceps-Induced Injury. *JAMA Ophthalmol*. 2017 Jun 8;135(6):e170669. doi: 10.1001/jamaophthalmol.2017.0669. Epub 2017 Jun 8. PubMed PMID: 28594995.

152: Yadav S, Khandelwal M, Seth A, Saini AK, Dogra PN, Sharma A. Serum microRNA Expression Profiling: Potential Diagnostic Implications of a Panel of Serum microRNAs for Clear Cell Renal Cell Cancer. *Urology*. 2017 Jun;104:64-69. doi: 10.1016/j.urology.2017.03.013. Epub 2017 Mar 20. PubMed PMID: 28336290.

OBJECTIVE: To study the expression profiles of 5 microRNAs in tissue and serum of patients with clear cell renal cell cancer (ccRCC) and evaluate their diagnostic and prognostic potential.

MATERIALS AND METHODS: We prospectively analyzed 30 patients of histologically proven ccRCC and collected 3mL of serum preoperatively and small pieces of tumor and adjacent non-tumor renal tissue intraoperatively. Control serum samples were obtained from 15 patients of non-renal benign diseases. We analyzed 5 miRNAs-miR-34a, miR-141, miR-200c, miR-1233, and miR-21-2. Freshly collected samples were immediately frozen in liquid nitrogen and total RNA was extracted. cDNA was synthesized by reverse transcription, and quantitative polymerase chain reaction was performed to determine relative miRNA expression.

RESULTS: In the renal tissue and serum samples, 3 out of 5 miRNAs were differentially expressed; that is, the expression levels of miR-34a and miR-141 were significantly decreased, whereas that of miR-1233 was significantly increased. Serum miR-34a, miR-141, and miR-1233 were able to diagnose ccRCC with a sensitivity of 80.76%, 75%, and 93.33%, and specificity of 80%, 73.33%, and 100%, respectively, as compared to histopathology. Using a panel of 2 serum miRNAs (miR-141 and miR-1233) ccRCC can be diagnosed with 100% sensitivity and 73.3% specificity.

CONCLUSION: miRNAs are differentially expressed in serum of patients with ccRCC and can be used to diagnose ccRCC with high sensitivity and specificity. Diagnostic sensitivity can be further improved by using a panel of miRNAs and has the potential to serve as novel diagnostic markers of ccRCC.

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DOI: 10.1016/j.urology.2017.03.013

PMID: 28336290

153: Yenamandra VK, Moss C, Sreenivas V, Khan M, Sivasubbu S, Sharma VK, Sethuraman G. Development of a clinical diagnostic matrix for characterizing

inherited epidermolysis bullosa. *Br J Dermatol.* 2017 Jun;176(6):1624-1632. doi: 10.1111/bjd.15221. Epub 2017 May 5. PubMed PMID: 27925151.

BACKGROUND: Accurately diagnosing the subtype of epidermolysis bullosa (EB) is critical for management and genetic counselling. Modern laboratory techniques are largely inaccessible in developing countries, where the diagnosis remains clinical and often inaccurate.

OBJECTIVES: To develop a simple clinical diagnostic tool to aid in the diagnosis and subtyping of EB.

METHODS: We developed a matrix indicating presence or absence of a set of distinctive clinical features (as rows) for the nine most prevalent EB subtypes (as columns). To test an individual patient, presence or absence of these features was compared with the findings expected in each of the nine subtypes to see which corresponded best. If two or more diagnoses scored equally, the diagnosis with the greatest number of specific features was selected. The matrix was tested using findings from 74 genetically characterized patients with EB aged > 6 months by an investigator blinded to molecular diagnosis. For concordance, matrix diagnoses were compared with molecular diagnoses.

RESULTS: Overall, concordance between the matrix and molecular diagnoses for the four major types of EB was 91.9%, with a kappa coefficient of 0.88 [95% confidence interval (CI) 0.81-0.95; $P < 0.001$]. The matrix achieved a 75.7% agreement in classifying EB into its nine subtypes, with a kappa coefficient of 0.73 (95% CI 0.69-0.77; $P < 0.001$).

CONCLUSIONS: The matrix appears to be simple, valid and useful in predicting the type and subtype of EB. An electronic version will facilitate further testing.

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