

**B . B . Dikshit Librar y**  
**AIIMS**  
**New Delhi**

List of publications of AIIMS, New  
Delhi for the month of DECEMBER, 2014  
[Source: [www.pubmed.com](http://www.pubmed.com)].

1: Akhter MZ, Rajeswari MR. Interaction of doxorubicin with a regulatory element of hmgal and its in vitro anti-cancer activity associated with decreased HMGA1 expression. *J Photochem Photobiol B*. 2014 Dec;141:36-46. doi: 10.1016/j.jphotobiol.2014.08.026. Epub 2014 Sep 19. PubMed PMID: 25313540.

High mobility group A1 (HMGA1) non-histone chromatin protein is known as an architectural transcription factor that regulates transcription of various genes. HMGA1 is highly expressed in almost all human cancers and considered as a potent tumor marker. Because of its association with cancers, hmgal is considered as a critical target for anti-cancer drugs. In the present study, we report interaction of doxorubicin (DOX) with a short deoxyoligonucleotide (-1917 to -1940) within a regulatory element of hmgal and its subsequent effect on expression of HMGA1 in breast cancer MCF7 cells. Binding of DOX to DNA was found to be strong ( $K_a$ ,  $5.2 \times 10^5 M^{-1}$ ) and thermodynamically favorable by both negative enthalpy ( $\Delta H$ ,  $-8.1 \pm 0.25 \text{ kcal M}^{-1}$ ) and positive entropy changes ( $T\Delta S$ ,  $21.1 \pm 5.2 \text{ kcal M}^{-1}$ ) at  $20^\circ\text{C}$ . A significant increase in melting temperature of DNA in presence of DOX by  $+10^\circ\text{C}$  was accompanied by substantial quenching of fluorescence of DOX ( $\sim 85\%$ ) at 595nm and hypochromic change ( $\sim 40\%$ ) at 500nm absorption spectra of DOX along with a bathochromic shift of  $\sim 5\text{nm}$ . Reduced expression of HMGA1 by  $\sim 60\%$  both at mRNA and protein level and associated cell death in presence of DOX was observed in breast cancer cells. Therefore, hmgal is a promising chemotherapeutic target in treating human malignancies.

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2: Alam R, Tripathi M, Mansoori N, Parveen S, Luthra K, Lakshmy R, Sharma S, Arulselvi S, Mukhopadhyay AK. Synergistic epistasis of paraoxonase 1 (rs662 and rs85460) and apolipoprotein E4 genes in pathogenesis of Alzheimer's disease and vascular dementia. *Am J Alzheimers Dis Other Demen*. 2014 Dec;29(8):769-76. doi: 10.1177/1533317514539541. Epub 2014 Jun 24. PubMed PMID: 24965284.

Genetic polymorphism and epistasis play a role in etiopathogenesis of Alzheimer's disease (AD) and vascular dementia (VaD). In this case-control study, a total of 241 patients were included in the study to see the effect of paraoxonase 1 (PON1; rs662 and rs85460) and apolipoprotein E (ApoE) genes in altering the odds of having AD and VaD along with serum PON and lipid profile. The presence of at least 1 variant allele of rs662, but not rs85460, increased the risk of having AD by 1.8-fold (95% confidence interval [CI]: 0.97-3.40) and VaD by 3.09-fold (95% CI: 1.4-6.9). The interaction between PON1 genes (rs662 and rs85460) and ApoE genes showed synergistic epistasis in altering the odds of significantly having both AD and VaD. On the other hand, low serum level of high-density lipoprotein and low level of serum PON activity were found associated significantly ( $P \leq .001$  in both cases) only in patients with VaD as compared to healthy control.

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3: Arora S, Soundararajan R, Joshi P, Kumar R, Bal C. Somatostatin Receptor Expressing Bilateral Ovarian Metastases Detected by  $^{68}\text{Ga}$  DOTANOC PET/CT. *Clin Nucl Med*. 2014 Dec 26. [Epub ahead of print] PubMed PMID: 25546200.

Bilateral ovarian metastasis from neuroendocrine tumor (NET) is uncommon. Ovarian NET could be primary or metastatic, and if it is bilateral, then the chances of metastatic disease are from 88% to 94%. Proper identification and appropriate management become necessary in such patients. Somatostatin receptor imaging by Ga-labeled DOTANOC ([1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid]-1-NaI<sup>3</sup>-Octreotide) PET/CT can be used for localization, staging, and restaging of NET, and it also has an impact on appropriate clinical management of patients with NET. We present here a case of somatostatin receptor expressing

bilateral ovarian metastases from NET demonstrated by Ga DOTANOC PET/CT imaging.

4: Arora T, Arora S, Sinha R. Management of intrastromal glass foreign body based on anterior segment optical coherence tomography and Pentacam analysis. *Int Ophthalmol*. 2014 Dec 19. [Epub ahead of print] PubMed PMID: 25523864.

5: Arora T, Sharma N, Arora S, Titiyal JS. Fulminant herpetic keratouveitis with flap necrosis following laser in situ keratomileusis: Case report and review of literature. *J Cataract Refract Surg*. 2014 Dec;40(12):2152-6. doi: 10.1016/j.jcrs.2014.09.018. Epub 2014 Oct 12. PubMed PMID: 25311411.

A 25-year-old woman presented with redness, pain, and diminution of vision that occurred 2 weeks after microkeratome-assisted laser in situ keratomileusis (LASIK). On presentation, corneal edema, Descemet membrane folds, keratic precipitates, stromal infiltrates, and flap necrosis were observed. Delayed post-LASIK microbial keratitis was diagnosed. The patient had no history of ocular herpes. Culture and scraping showed no organisms. Immunofluorescence stain was positive for the herpes simplex virus antigen. The patient was started on oral valacyclovir, and progress was monitored through serial clinical photographs and anterior segment optical coherence tomography. Resolution began within 3 days of initiating treatment and was complete in 4 weeks. FINANCIAL DISCLOSURE: No author has a financial or proprietary interest in any material or method mentioned.

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6: Bakhshi S, Biswas B. Advances in Pediatric Cancer Therapy: Potential Applicability in Indian Scenario. *Indian J Pediatr*. 2014 Dec 18. [Epub ahead of print] PubMed PMID: 25514889.

7: Bandivadekar P, Sharma N, Pillai G, Agarwal T, Titiyal JS. Acute hydrops with secondary bacterial keratitis: sequelae of paediatric refractive surgery. *Int Ophthalmol*. 2014 Dec;34(6):1275-8. doi: 10.1007/s10792-014-9986-9. Epub 2014 Sep 5. PubMed PMID: 25189682.

A 24-year-old male patient with bilateral high myopia presented to our outpatient department with sudden onset of pain and diminution of vision in his right eye. He had sequentially undergone bilateral trabeculectomy and photorefractive keratectomy at the age of 6 years in both eyes. This was followed by radial keratotomy in right eye at the age of 8 years. The slit lamp examination demonstrated the presence of infiltrates in central cornea with an underlying fluid cleft, along with 14 radial keratotomy scars. Anterior segment optical coherence tomography confirmed the presence of intrastromal cleft in communication with anterior chamber. Bacterial culture revealed coagulase-negative Staphylococcus. The patient was successfully treated with fortified antibiotics in conjunction with the sensitivity report. This case underlines the need for a cautious approach towards refractive surgery in paediatric age group and highlights the long-term sequelae of retreatments in these cases.

8: Baranwal AK. Response to Grunwell: Dexamethasone pretreatment for 24 h versus 6 h for prevention of postextubation airway obstruction in children. *Intensive Care Med*. 2014 Dec 20. [Epub ahead of print] PubMed PMID: 25527373.

9: Batra P, Mathur P, Misra MC. *Aeromonas* spp as a causative agent for nosocomial infection in trauma patients. *J Infect*. 2014 Dec 18. pii: S0163-4453(14)00375-2. doi: 10.1016/j.jinf.2014.12.004. [Epub ahead of print] PubMed PMID: 25530470.

10: Bharti S, Rani N, Bhatia J, Arya DS. 5-HT<sub>2B</sub> receptor blockade attenuates  $\beta$ -adrenergic receptor-stimulated myocardial remodeling in rats via inhibiting apoptosis: role of MAPKs and HSPs. *Apoptosis*. 2014 Dec 28. [Epub ahead of print] PubMed PMID: 25544272.

Recent studies have proposed the potential role of 5-HT<sub>2B</sub> receptor (5-HT<sub>2BR</sub>) blockade in alleviating myocardial dysfunction; hitherto, the regulatory pathway for its protective effect has remained enigmatic. In the present study, we sought to investigate the role of SB-204741, a 5-HT<sub>2BR</sub> blocker in isoproterenol-induced myocardial remodeling in rats and its cross-talk with apoptosis and mitogen activated protein kinase (MAPKs)/heat shock proteins (HSPs) pathway. To assess this hypothesis, we measured the effect of SB-204741 (0.25-1.0 mg/kg/day, i.p.) in isoproterenol (85 mg/kg/day, s.c.)-induced myocardial remodeling in rats. SB-204741 dose dependently improved hemodynamic and ventricular functions following isoproterenol-induced myocardial injury. This amelioration was well substantiated with reduced expression of 5-HT<sub>2B</sub>, inflammatory proteins (NF- $\kappa$ Bp65, IKK- $\beta$ , TNF- $\alpha$ , IL-6, and Cox-2), MAPKs (p-p38/p38 and p-JNK/JNK ratio) accompanied with increased protein expression of HSPs ( $\alpha$ B-crystallin, Hsp27 and Hsp70), autophagy (LC3 and Beclin-1) and p-ERK/ERK ratio. Additionally, SB-204741 inhibited apoptotic signaling pathway as there was decreased DAPI/TUNEL positivity and protein expression of cytochrome c, Bax, and caspase-3 along with increased Bcl-2 expression. Preservation of histopathological and ultrastructural components, normalization of nitric oxide level, endogenous antioxidants and myocyte injury marker enzymes were also observed. In conclusion, inhibition of apoptosis via modulation of MAPKs/HSPs is essential for 5-HT<sub>2BR</sub> blockade mediated cardioprotective effect.

11: Bhat DK, Kanga U, Kumar N, Agrawal RP, Mourya M, Kalaivani M, Kaur T, Mehra NK. The Raikas - A unique combination of high prevalence of type 1 diabetes susceptibility genes and near zero incidence of the disease. *Hum Immunol*. 2014 Dec;75(12):1252-8. doi: 10.1016/j.humimm.2014.09.009. Epub 2014 Oct 13. PubMed PMID: 25312801.

The Raikas, a camel rearing tribal group living in the Thar desert of Rajasthan has been reported with a very low incidence of diabetes. We analysed the frequency distribution of HLA alleles in this community and compared the same with the non-Raika group living in the same geographic location and also that of the healthy North Indian (NI) population. The data revealed an exceptionally high phenotype frequency of HLA-DRB1\*03 in this community (53%) as compared to the non-Raika group (27.73%,  $p=7.9E-05$ ) and the NI population (14.6%,  $p=7.65E06$ ). Further analysis revealed the occurrence of four major DRB1\*03 haplotypes in the Raikas: (i) A\*26-B\*08-DRB1\*03 (AH8.2, 11.76%); (ii) A\*24-B\*08-DRB1\*03 (AH8.3, 8.82%); (iii) A\*02-B\*08-DRB1\*03 (3.78%); (iv) A\*01-B\*08-DRB1\*03 (AH8.1v, 0.84%); all of which occurred with a several fold higher frequency in the Raikas than the other two groups. These haplotypes have been reported to be positively associated with T1D in the NI population. The apparent lack of T1D and/or other autoimmune diseases in the Raikas despite the higher occurrence of known disease associated HLA alleles/haplotypes is intriguing and highlights the quintessential role of the environmental factors, food habits and level of physical activity in the manifestation of T1D. Possible influence of other protection conferring genes located on, as yet undefined chromosomal locations cannot be ruled out.

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12: Bhatia R, Shobha N, Menon BK, Bal SP, Kochar P, Palumbo V, Wong JH, Morrish WF, Hudon ME, Hu W, Coutts SB, Barber PA, Watson T, Goyal M, Demchuk AM, Hill MD. Combined full-dose IV and endovascular thrombolysis in acute ischaemic stroke. *Int J Stroke*. 2014 Dec;9(8):974-9. doi: 10.1111/j.1747-4949.2012.00890.x. Epub 2012 Sep 27. PubMed PMID: 23013039.

**BACKGROUND:** There is an increasing trend to treating proximal vessel occlusions with intravenous-inter-arterial (IV-IA) thrombolysis. The best dose of IV tissue plasminogen activator (tPA) remains undetermined. We compared the combination of full-dose IV recombinant tissue plasminogen activator (rtPA) and IA thrombolytic therapy to IA therapy.

**METHODS:** Between 2002 and 2009, we reviewed our computed tomographic angiography database for patients who received full-dose intravenous rtPA and endovascular therapy or endovascular therapy alone for acute ischaemic stroke treatment. Details of demographics, risk factors, endovascular procedure, and symptomatic intracranial haemorrhage were noted. Modified Rankin Scale  $\leq 2$  at three-months was used as good outcome. Recanalization was defined as Thrombolysis in Myocardial Ischaemia 2-3 flow on angiography.

**RESULTS:** Among 157 patients, 104 patients received IV-IA treatment and 53 patients underwent direct IA therapy. There was a higher recanalization rate with IV-IA therapy compared with IA alone (71% vs. 60%,  $P < 0.21$ ) which was driven by early recanalization after IV rtPA. Mortality and independent outcome were comparable between the two groups. Symptomatic intracranial haemorrhage occurred in 8% of patients (12% in the IA group, 7% in the IV-IA group) but was more frequent as the intensity of intervention increased from device alone to thrombolytic drug alone to device plus thrombolytic drug(s). Recanalization was a strong predictor of reduced mortality risk ratio (RR) 0.48 confidence interval 95 0.27-0.84) and favourable outcome (RR 2.14 confidence interval 95 1.3-3.5).

**CONCLUSIONS:** Combined IV-IA therapy with full-dose intravenous rtPA was safe and results in good recanalization rates without excess symptomatic intracranial haemorrhage. Testing of full-dose IV tPA followed by endovascular treatment in the IMS3 trial is justified.

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13: Bhatt K, Roychoudhury A, Bhutia O, Pandey RM. Functional outcomes of gap and interposition arthroplasty in the treatment of temporomandibular joint ankylosis. *J Oral Maxillofac Surg*. 2014 Dec;72(12):2434-9. doi: 10.1016/j.joms.2014.08.012. Epub 2014 Aug 13. PubMed PMID: 25315308.

**PURPOSE:** Recurrence is a major concern in management of temporomandibular joint ankylosis. In this study functional outcomes of gap arthroplasty (group I) and temporalis myofascial interposition arthroplasty (group II) are compared.

**MATERIALS AND METHODS:** Preoperative, intraoperative, and follow-up data were noted from our departmental database. Outcome variables were postoperative mouth opening, open bite, recurrence, and facial nerve dysfunction. The  $\chi^2$  test, Fisher test, t test, 2-sample Wilcoxon rank sum test, and logistic regression analysis were used.

**RESULTS:** Group I comprised 207 patients, and group II comprised 55 patients. The mean age was 12.9 years (SD, 7.0 years). There were 220 nonrecurrent and 42

recurrent cases. The mean follow-up period was 3.78 years (SD, 3.0 years). In first time-operated cases, the recurrence rate was 14.7% in group I and 4.8% in group II. In recurrent cases, the recurrence rate was 34.5% and 30.8%, respectively. The differences were statistically insignificant.

CONCLUSIONS: In first-time operated temporomandibular joint ankylosis cases, both treatments are satisfactory in preventing recurrence, but the recurrence rate increases with previous recurrences.

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14: Biswas B, Rastogi S, Khan SA, Shukla NK, Deo SV, Agarwala S, Mohanti BK, Sharma MC, Vishnubhatla S, Bakhshi S. Developing a prognostic model for localized Ewing sarcoma family of tumors: A single institutional experience of 224 cases treated with uniform chemotherapy protocol. *J Surg Oncol*. 2014 Dec 29. doi: 10.1002/jso.23861. [Epub ahead of print] PubMed PMID: 25557999.

BACKGROUND: Data on patients with localized Ewing sarcoma family of tumors (ESFT) who have received a uniform chemotherapy protocol are minimal.

METHODS: This is a single institutional review of patients with ESFT treated between June 2003 and November 2011.

RESULTS: 224/374 (60%) patients with ESFT presented with localized disease; median age was 15 years (range: 0.1-55). Ninety-nine patients underwent surgery of which 50 received adjuvant radiotherapy; 80 patients received radical radiotherapy following neoadjuvant chemotherapy. At median follow-up of 40.2 months (range: 1.3-129), 5-year EFS, OS, and local-control-rate, were  $36.8 \pm 3.6\%$ ,  $52.4 \pm 4.3\%$ , and  $63 \pm 4.3\%$ , respectively. In multivariate analysis, tumor diameter  $>8$  cm ( $P=0.03$ ), symptom duration  $>4$  months ( $P=0.04$ ), and WBC  $>11 \times 10^9$  /L ( $P=0.003$ ) predicted inferior EFS; spine/abdomino-pelvic primary ( $P=0.009$ ) and WBC  $>11 \times 10^9$  /L ( $P=0.003$ ) predicted inferior OS. Tumor size  $>8$  cm ( $P=0.03$ ) and radical radiotherapy as local treatment ( $P=0.01$ ) predicted inferior local-control-rate.

CONCLUSION: Prognostic hazard models for EFS and OS based on significant prognostic factors suggested that patients with combination of ESFT of spine/abdomino-pelvic region and baseline WBC  $>11 \times 10^9$  /L had inferior OS (hazard ratio 4.44,  $P<0.001$ ) while patients with combination of ESFT with symptom duration  $>4$  months, tumor diameter  $>8$  m and baseline WBC  $>11 \times 10^9$  /L had inferior EFS (hazard ratio 3.89,  $P=0.002$ ). *J. Surg. Oncol.* © 2014 Wiley Periodicals, Inc.

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15: Bothra M, Jain V. Diabetes insipidus in pediatric patients. *Indian J Pediatr*. 2014 Dec;81(12):1285-6. doi: 10.1007/s12098-014-1612-3. Epub 2014 Nov 6. PubMed PMID: 25371144.

16: Chandra PS, Goyal N. In Reply. *Neurosurgery*. 2014 Dec 29. [Epub ahead of print] PubMed PMID: 25549199.

17: Chandra PS. In Reply: Distraction, Compression, and Extension Reduction of Basilar Invagination and Atlantoaxial Dislocation. *Neurosurgery*. 2014 Dec 29. [Epub ahead of print] PubMed PMID: 25549197.

18: Chandra PS, Goyal N, Chauhan A, Ansari A, Sharma BS, Garg A. The severity of basilar invagination and atlantoaxial dislocation correlates with sagittal joint inclination, coronal joint inclination, and craniocervical tilt: a description of new indexes for the craniovertebral junction. *Neurosurgery*. 2014 Dec;10 Suppl 4:621-9; discussion 629-30. doi: 10.1227/NEU.0000000000000470. PubMed PMID: 25320950.

**BACKGROUND:** Joint-distraction and intra-operative manipulation surgeries to correct basilar invagination (BI) and atlantoaxial dislocation (AAD) are becoming standard procedures. However, current data are unable to aid in the understanding of normal and abnormal morphology of the C1/C2 joints.

**OBJECTIVE:** To study various aspects of C1/C2 joint morphology to create normative and patient data on joint abnormalities that could provide the surgeon with objective data for surgical planning and approach.

**METHODS:** Seventy patients (age, 15-45 years) were compared with an equal number of age- and sex-matched control subjects (age, 21.9±8.2 years) with irreducible BI and AAD from a developmental origin (May 2010-July 2013). Joint anatomy was studied with the use of thin-slice computed tomography scans. The joint parameters studied included sagittal joint inclination, craniocervical tilt, coronal joint inclination, surface area, joint overlap index, and joint reciprocity. The severity of BI and the severity of AAD were compared.

**RESULTS:** Sagittal joint inclination and craniocervical tilt significantly correlated with both BI and AAD ( $P < .01$ ). Coronal joint inclination correlated with BI ( $P = .2$ ). The mean sagittal joint inclination value in control subjects was  $87.15 \pm 5.65^\circ$  and in patients with BI and AAD was  $127.1 \pm 22.05^\circ$ . The mean craniocervical tilt value in controls was  $60.2 \pm 9.2^\circ$  and in patients with BI and AAD was  $84.0 \pm 15.1^\circ$ . The mean coronal joint inclination value in control subjects was  $110.3 \pm 4.23^\circ$  and in patients with BI and AAD was  $121.15 \pm 14.6^\circ$ .

**CONCLUSION:** This study has demonstrated for the first time the important role of joint orientation and its correlation with the severity of BI and AAD and has described new joint indexes.

19: Chandra PS, Vaghania G, Bal CS, Tripathi M, Kuruwale N, Arora A, Garg A, Sarkar C, Diwedi R, Malviya S, Padma V, Tripathi M. Role of concordance between ictal-subtracted SPECT and PET in predicting long-term outcomes after epilepsy surgery. *Epilepsy Res*. 2014 Dec;108(10):1782-9. doi: 10.1016/j.eplepsyres.2014.09.024. Epub 2014 Sep 28. PubMed PMID: 25308754.

**OBJECTIVE:** F-18 fluorodeoxyglucose positron emission tomography (FDG-PET) and ictally subtracted single photon emission tomography (iSPECT) are important for localizing the epileptogenic focus. The following study analyzes the role of inter-concordance between FDG-PET and iSPECT in predicting long-term outcomes after epilepsy surgery.

**METHODS:** We prospectively evaluated (January 2003-January 2008) patients undergoing surgery for temporal or extratemporal drug refractory epilepsy (DRE) who had at least a 5 years follow up. Patients with MRI and video EEG (vEEG) concordance for the seizure focus underwent iSPECT and FDG-PET. Concordance of the iSPECT and FDG-PET with each other and with the substrate (defined by MRI and vEEG) for temporal and extra-temporal epilepsies was evaluated and correlated with outcomes.

**RESULTS:** One hundred twenty-three patients (74 males) were included in the study (mean age at time of surgery:  $18.9 \pm 10.41$  years). The mean age of onset of

seizures was  $9.87 \pm 8.37$  years. The most common semiology was complex partial (45%). When both FDG-PET and iSPECT were concordant with each other, this translated into a (class I Engel at 5 years) outcome of 62% for extra-temporal epilepsies (provided they were also concordant with the lesion, as defined by MRI and vEEG). This percentage was significant ( $p < 0.01$ ) compared with all other situations (both FDG-PET/iSPECT not concordant to MRI/vEEG, only PET or iSPECT concordant with MRI/vEEG). This correlation was not found for the temporal epilepsies, where the MRI and vEEG were the most important prognostic parameters. In both temporal and extratemporal epilepsies the concordance of the iSPECT/FDG-PET with the MRI/vEEG correlated with a better 5-year outcome (temporal: 70% vs 25%; extra-temporal: 62% vs 33%;  $p < 0.05$ ).

**SIGNIFICANCE:** Concordance between non-invasive investigations iSPECT and FDG-PET is an important predictive factor for surgical outcomes in extra-temporal epilepsy.

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20: Chandrasekaran A, Thukral A, Deorari AK. E-learning in newborn health - a paradigm shift for continuing professional development for doctors and nurses. *Indian J Pediatr.* 2014 Dec;81(12):1376-80. doi: 10.1007/s12098-014-1362-2. Epub 2014 Mar 7. PubMed PMID: 24599789.

Neonatal mortality can be largely prevented by wide-scale coverage of components of essential newborn care and management of sick neonates in district-level healthcare facilities. A vital step in this direction is imparting the requisite knowledge and skill among healthcare providers. Medical education programs with their static curricula seldom adapt to the changing needs of neonatal healthcare providers in patient-centered, collaborative and remote delivery contexts. E-learning is emerging as the cutting edge tool towards refinement of knowledge, attitude and practices of physicians. Module-based e-learning courses can be blended with a skill learning contact period in partnering institutions thus saving resources and rapidly covering a wide geographical region with uniform standardized education. In this review, the authors discuss their experience with e-learning aimed at introducing and refining the understanding of sick newborn care among pre-service and in-service doctors who manage neonates.

21: Das S, Ghosh AK, Singh S, Saha B, Ganguly A, Das P. Unmethylated CpG motifs in the *L. donovani* DNA regulate TLR9-dependent delay of programmed cell death in macrophages. *J Leukoc Biol.* 2014 Dec 3. pii: jlb.4A0713-378RR. [Epub ahead of print] PubMed PMID: 25473100.

Regulation of macrophage PCD plays an important role in pathogenesis of leishmaniasis. However, the precise involvement of any parasite molecule in this process remains uncertain. In the current study, *in silico* wide analysis demonstrated that genes in the *Leishmania donovani* genome are highly enriched for CpG motifs, with sequence frequency of 8.7%. Here, we show that unmethylated species-specific CpG motifs in LdDNA significantly ( $P = 0.01$ ) delay macrophage PCD by endosomal interaction with TLR9 via the adaptor protein MyD88. Importantly, LdDNA triggered high levels of luciferase activity ( $P = 0.001$ ) under NF- $\kappa$ B-dependent transcription in HEK-TLR9 cells. Furthermore, the activation of caspases in macrophages was inhibited ( $P = 0.001$ ) in the presence of LdDNA. Notably, the delay of PCD was mediated by modulation of the antiapoptotic proteins, Mcl-1 and Bfl-1, and impairment of loss of  $\Delta\psi_m$  in macrophages through the neutralization of oxidative and nitrosative stress. The inhibition of caspase activation and up-regulation of Mcl-1 by LdDNA were TLR9 dependent. Analysis of the targets of LdDNA identified an early activation of the TLR9-dependent PI3K/Akt and SFK pathways, which were required for the observation of the



antiapoptotic effects in macrophages. Moreover, we demonstrate that LdDNA modulates the TLR9-I $\kappa$ B- $\alpha$  pathway by promoting the tyrosine phosphorylation of TLR9 and the TLR9-mediated recruitment of Syk kinase. The results have identified a novel, TLR9-dependent antiapoptotic function of LdDNA, which will provide new opportunities for discovering and evaluating molecular targets for drug and vaccine designing against VL.

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22: Dhingra A, Garg A, Kaur S, Chopra S, Batra JS, Pandey A, Chaanine AH, Agarwal SK. Epidemiology of heart failure with preserved ejection fraction. *Curr Heart Fail Rep.* 2014 Dec;11(4):354-65. doi: 10.1007/s11897-014-0223-7. PubMed PMID: 25224319.

The prevalence of heart failure (HF) and its subtype, HF with preserved ejection fraction (HFpEF), is on the rise due to aging of the population. HFpEF is convergence of several pathophysiological processes, which are not yet clearly identified. HFpEF is usually seen in association with systemic diseases, such as diabetes, hypertension, atrial fibrillation, sleep apnea, renal and pulmonary disease. The proportion of HF patients with HFpEF varies by patient demographics, study settings (cohort vs. clinical trial, outpatient clinics vs. hospitalised patients) and cut points used to define preserved function. There is an expanding body of literature about prevalence and prognostic significance of both cardiovascular and non-cardiovascular comorbidities in HFpEF patients. Current therapeutic approaches are targeted towards alleviating the symptoms, treating the associated comorbid conditions, and reducing recurrent hospital admissions. There is lack of evidence-based therapies that show a reduction in the mortality amongst HFpEF patients; however, an improvement in exercise tolerance and quality of life is seen with few interventions. In this review, we highlight the epidemiology and current treatment options for HFpEF.

23: Dhull AK, Kaushal V, Singh S, Pal M, Lathwal A. A journey into insidious world of MALT lymphoma of the ileum: from the beginning to the end. *J Gastrointest Oncol.* 2014 Dec;5(6):E125-7. doi: 10.3978/j.issn.2078-6891.2014.063. PubMed PMID: 25436136; PubMed Central PMCID: PMC4226819.

**INTRODUCTION:** Lymphoma of the mucosa-associated lymphoid tissue (MALT) has been used to describe a marginal zone B-cell lymphoma derived from gastrointestinal lymphoid tissue. mucosa-associated lymphoid tissue lymphoma (MALToma) of the ileum are extremely rare and only few reports with endoscopic features have been reported.

**CASE STUDY:** We present a 55-year-old male patient with history of abdominal pain and loss of appetite since 2½ years. Abdomino-pelvic ultrasonography was normal, but computed tomography (CT) scan of the abdomen showed, dilated segment of ileum containing both contrast and debris. He underwent segmental resection of ileum associated with stricture site, histopathology of which revealed MALToma of ileum. Patient was subsequently treated with low dose chemotherapy and strictly followed up.

**DISCUSSION:** Primary treatment possibility should be considered as the treatment of H. pylori infection while surgical resection for superficial lesions followed by low dose chemotherapy is recommended. The present case report explore MALToma of the GI tract, its diagnostic criterions, role of radiological and pathological tools, various investigative techniques and role of surgery and chemotherapy in such cases.

24: Dixit SG, Kaur J, Nayyar AK, Agrawal D. Morphometric analysis and anatomical variations of infraorbital foramen: A study in adult North Indian population. *Morphologie*. 2014 Dec;98(323):166-70. doi: 10.1016/j.morpho.2014.02.008. Epub 2014 May 20. PubMed PMID: 24857562.

**PURPOSE:** Various studies have been conducted on morphometric variations of infraorbital foramen to provide data to surgeons for nerve block in infraorbital region. This study aims to analyse the anatomical variations by comparing various morphometric measurements of infraorbital foramen in dry skulls of adult North Indian population. This study becomes relevant in the present study group as very scant data is available about the variations and morphometric measurements in Indian population. The data thus collected can be standardized and become useful for the surgeons working in this area of face.

**MATERIALS AND METHODS:** The study was conducted on 75 dry adult human skulls, which were a part of Department of Anatomy, used for teaching purposes in medical colleges. Straight distance of the Infraorbital foramen from the infraorbital rim, supraorbital foramen and sagittal plane was measured. The position of the infraorbital foramen was determined in relation to maxillary teeth and supraorbital foramen. The data thus obtained was analysed.

**RESULTS:** The distance of infraorbital foramen from infraorbital rim, supraorbital foramen, sagittal plane in the present study was found to be  $6.71\pm 1.11$ mm,  $42.02\pm 4.31$ mm and  $31.94\pm 4.88$ mm respectively. The position of infraorbital foramen was lateral in relation to supraorbital foramen (in 88% of cases). Infraorbital foramen was above the 1st premolar tooth in most of the cases. Accessory infraorbital foramen was found in 11.2% cases (double foramen).

**CONCLUSION:** The data thus obtained will perhaps be helpful to the surgeons in identifying the extent of the operative field thereby reducing procedural risks.

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25: Ekka M, Lakra SB, Aggarwal P, Jamshed N. Hydration therapy: critical intervention in the ED to prevent stroke in evolution after acute ischemic stroke. *Am J Emerg Med*. 2014 Dec;32(12):1544. doi: 10.1016/j.ajem.2014.09.031. Epub 2014 Sep 28. PubMed PMID: 25312219.

26: Elhence A, Jalan D, Rathore DS, Kumar MD, Chahar H. Comment on Madelaine et al.: Results and complications of single-stage total knee arthroplasty and high tibial osteotomy. *Int Orthop*. 2014 Dec 24. [Epub ahead of print] PubMed PMID: 25532860.

27: Elhence A, Jalan D, Talreja H. Fractures of the posterior wall of the acetabulum: Treatment using internal fixation of two parallel reconstruction plates. *Injury*. 2014 Dec;45(12):2112. doi: 10.1016/j.injury.2014.04.013. Epub 2014 Apr 16. PubMed PMID: 24815375.

28: Farooque K, Khatri K, Dev C, Sharma V, Gupta B. Mechanism of injury and management in traumatic anterior shoulder dislocation with concomitant humeral shaft and ipsilateral scapula fracture: a case report and review of the literature. *J Med Case Rep*. 2014 Dec 16;8:431. doi: 10.1186/1752-1947-8-431. PubMed PMID: 25511744.

**INTRODUCTION:** Traumatic anterior dislocation of the shoulder is an emergency and warrants urgent attention. However, it becomes difficult to manage in cases of associated fractures of humerus and other bones surrounding the shoulder joint. There have been reports of traumatic anterior dislocation of the shoulder associated with humeral fractures in the literature but the trilogy of anterior dislocation of the shoulder; humeral shaft fracture; and scapular fracture have never been described.

**CASE PRESENTATION:** We present the case of a 27-year-old south Asian man presenting with the above-mentioned injury. He was managed with open reduction and internal fixation of the fracture and subsequent reduction at the shoulder joint. The fracture of the scapula was managed conservatively. Radiological union was achieved at 14 weeks with a good range of movements at the shoulder.

**CONCLUSIONS:** Shoulder dislocation associated with fractures of humerus and scapula occurs in rare circumstances due to the peculiar mechanism of injury. There is risk of neurovascular damage while attempting joint reduction without fracture fixation so, in these cases, the fracture should be addressed first and dislocation later.

29: Garg K, Singh PK, Mahapatra AK, Sharma BS. Bilateral abducens nerve palsy associated with subarachnoid hemorrhage. *Br J Neurosurg.* 2014 Dec;28(6):771-5. doi: 10.3109/02688697.2014.913780. Epub 2014 May 6. PubMed PMID: 24801805.

**OBJECTIVE:** Isolated abducens nerve palsies associated with intracranial aneurysms have rarely been reported. The purpose of the study was to study the patients with bilateral abducens nerve palsy in association with subarachnoid hemorrhage (SAH).

**METHODS:** All patients admitted and managed at our center with a diagnosis of SAH and had bilateral abducens nerve palsy were included in the study. The demographic and clinical details, radiological findings, treatment data, and outcome of these patients were retrieved from the computerized database of our hospital.

**RESULTS:** Nine patients, with a mean age of 49.4 years, met the inclusion criteria. Male to female ratio of 1.25:1. Average duration of symptoms before presentation was 2.6 days (ranging from 1 to 4 days). Third nerve palsy in addition to bilateral abducens nerve palsy was present in 4 patients (44%). DSA demonstrated aneurysms in 7 patients; 4 had posterior circulation aneurysms and 3 had aneurysms of anterior circulation. Two patients had angionegative SAH. The abnormality resolved in all but one patient over a time period of 4-9 weeks, and one patient died due to unrelated cause.

**CONCLUSIONS:** Bilateral abducens nerve palsy in association with SAH is rarely described. Proposed mechanisms include direct compression of the bilateral abducens nerves, vasospasm of the pontine branches of the basilar artery and hydrocephalous. Most of the patients in our series showed resolution of the symptoms over a period of 4-9 weeks.

30: Garg PK, Pandey D, Sachdeva S. Preventive cholecystectomy for gallbladder cancer in high-risk groups: primary or secondary prevention. *Eur J Gastroenterol Hepatol.* 2014 Dec;26(12):1439. doi: 10.1097/MEG.000000000000211. PubMed PMID: 25357220.

31: Garg PK, Pandey D, Mridha AR, Shakya R, Sharma J. Xanthogranulomatous inflammation of gallbladder and bile duct causing obstructive jaundice masquerades gallbladder cancer: a formidable diagnostic challenge continues. *J Gastrointest Cancer*. 2014 Dec;45 Suppl 1:178-81. doi: 10.1007/s12029-014-9620-0. PubMed PMID: 24802227.

32: Ghodke S, Utreja AK, Singh SP, Jena AK. Effects of twin-block appliance on the anatomy of pharyngeal airway passage (PAP) in class II malocclusion subjects. *Prog Orthod*. 2014 Dec 23;15:68. doi: 10.1186/s40510-014-0068-3. PubMed PMID: 25534004; PubMed Central PMCID: PMC4274348.

**BACKGROUND:** The use of functional appliances for the correction of retrognathic mandible is very common in orthodontics. Similar appliances known as oral appliances are also frequently used in adults for the treatment of mild to moderate obstructive sleep apnea (OSA). Many studies have reported improvement of pharyngeal airway passage (PAP) dimensions following functional appliance therapy in children and oral appliance therapy in adults. There is only one study in the literature that discussed the effect of oral appliance therapy on posterior pharyngeal wall thickness (PPWT) among subjects with OSA. The effect of functional appliance therapy on PPWT has never been investigated. Thus the present study was conducted to evaluate the effects of twin-block appliance on pharyngeal airway passage (PAP) dimensions and posterior pharyngeal wall thickness (PPWT) in class II malocclusion subjects with retrognathic mandibles.

**METHODS:** Thirty-eight class II malocclusion subjects in the age range of 8 to 14 years with mandibular retrusion were divided into a treatment (n=20) and control (n=18) group. Mandibular retrusion in the treatment group subjects was corrected by twin-block appliance. The effect of twin-block appliance on PAP and PPWT dimensions were evaluated from lateral cephalograms recorded prior-to and after 6 months of appliance therapy in the treatment group subjects and the changes were compared with the changes in the control group subjects. Student's t-test was used for statistical analysis; P-value of 0.05 was considered a statistically significant level.

**RESULTS:** The depth of the oropharynx was increased significantly in the treatment group subjects ( $P < 0.001$ ) as compared to the control group subjects ( $P < 0.05$ ). The depth of the hypopharynx increased significantly in treatment group subjects ( $P < 0.01$ ). The PPWT at the level of the nasopharynx, oropharynx, and hypopharynx were maintained in the treatment group subjects; whereas in control group subjects, the PPWT was further reduced although the changes were not statistically significant.

**CONCLUSIONS:** Correction of mandibular retrusion by twin-block appliance in class II malocclusion subjects increased the PAP dimensions and maintained the pre-treatment thickness of posterior pharyngeal wall.

33: Giridhar P, Mallick S, Laviraj MA, Bhasker S. Adenoid cystic carcinoma sphenoid sinus with intracranial extension treated by radical radiotherapy: a rare case. *Eur Arch Otorhinolaryngol*. 2014 Dec 13. [Epub ahead of print] PubMed PMID: 25503101.

34: Gogia A, Raina V, Gupta R, Gajendra S, Kumar L, Sharma A, Kumar R, Vishnubhatla S. Prognostic and predictive significance of smudge cell percentage on routine blood smear in chronic lymphocytic leukemia. *Clin Lymphoma Myeloma Leuk*. 2014 Dec;14(6):514-7. doi: 10.1016/j.clml.2014.02.007. Epub 2014 Feb 18. PubMed PMID: 24656596.

**INTRODUCTION/BACKGROUND:** Smudge cells are ruptured lymphocytes present on routine blood smears of chronic lymphocytic leukemia (CLL) patients. We evaluated prognostic and predictive significance of smudge cell percentage on a blood smear in CLL patients.

**MATERIALS AND METHODS:** We calculated smudge cell percentages (ratio of smudged to intact cells plus smudged lymphocytes) on archived blood smears of 222 untreated CLL patients registered at Institute Rotary Cancer Hospital, All India Institute of Medical Sciences, New Delhi over the past 12 years.

**RESULTS:** The male:female ratio was 3:1, and median age 60 (range, 28-90) years. Median absolute lymphocyte count was  $42 \times 10^9/L$ . The median smudge cell percentage was 29.6% (range, 4%-79%). We found no correlation of proportion of smudge cells with age, sex, lymphocyte count, organomegaly, or response to therapy, although there was a significant correlation with the Rai stage at diagnosis. Median smudge cell percentage in stage 0 and I was 33% (range, 12%-79%), in stage II 31% (range, 12%-61%), and stage III and IV 21% (range, 4%-51%) ( $P < .001$ ). Patients with  $\leq 30\%$  smudge cells had a shorter median progression-free period (PFP) of 30 months compared with patients who had more than 30% smudge cells (PFP, 45 months;  $P = .01$ ). The 5-year survival rate was 51% for patients with 30% or fewer smudge cells, and it was 81% for patients with more than 30% smudge cells ( $P < .001$ ) at a median follow-up of 3.5 years.

**CONCLUSION:** Simple and inexpensive detection of smudge cells on routine blood smears seems useful in predicting progression-free and overall survival in CLL patients and might be beneficial in countries with limited resources.

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35: Golechha M, Sarangal V, Bhatia J, Chaudhry U, Saluja D, Arya DS. Naringin ameliorates pentylentetrazol-induced seizures and associated oxidative stress, inflammation, and cognitive impairment in rats: Possible mechanisms of neuroprotection. *Epilepsy Behav.* 2014 Dec;41:98-102. doi: 10.1016/j.yebeh.2014.09.058. Epub 2014 Oct 14. PubMed PMID: 25461197.

Oxidative stress and cognitive impairment are associated with PTZ-induced convulsions. Naringin is a bioflavonoid present in the grapefruit. It is a potent antioxidant, and we evaluated its effect on PTZ-induced convulsions. Rats were pretreated with normal saline, naringin (20, 40, and 80mg/kg, i.p.), or diazepam (5mg/kg, i.p.) 30min prior to the administration of PTZ. The administration of PTZ induced myoclonic jerks and generalized tonic-clonic seizures (GTSS). We observed that naringin significantly prolonged the induction of myoclonic jerks dose-dependently. Naringin (80mg/kg, i.p.) pretreatment protected all rats, and this protective effect was annulled by the GABAA receptor antagonist, flumazenil. In addition, naringin reduced brain MDA and TNF- $\alpha$  levels and conserved GSH. The pretreatment also enhanced the performance of rats in the passive avoidance task. Our observations highlight the antioxidant, antiinflammatory, and anticonvulsant potential of naringin. Also, naringin modulates the GABAA receptor to produce anticonvulsant effects and to ameliorate cognitive impairment.

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36: Goswami S, Gupta V, Srivastava A, Sihota R, Malik MA, Kaur J. A novel duplication in the PAX6 gene in a North Indian family with aniridia. *Int Ophthalmol.* 2014 Dec;34(6):1183-8. doi: 10.1007/s10792-013-9882-8. Epub 2014 Sep 5. PubMed PMID: 25189681.

Mutations in paired box gene 6 (PAX6) are the major cause of aniridia that may be associated with several other developmental anomalies of the eye, including microcornea in rare cases. Therefore, the purpose of this study was to identify the underlying genetic cause in a two-generation North Indian family diagnosed

with aniridia. All the participants enrolled in the study, including the aniridia family and 20 healthy individuals (controls), underwent a comprehensive ophthalmic examination. Mutation screening was performed for the PAX6 gene by direct sequencing of the polymerase chain reaction products. A novel PAX6 duplication in exon 5 at position c.474dupC was identified in all three affected individuals from the family but not in the unaffected family members or unrelated controls. We reported a novel duplication in the PAX6 gene capable of causing the classic aniridia phenotype. This is the first report on the duplication in a North Indian family with autosomal dominant aniridia.

37: Goyal A, Singh S, Tandon N, Gupta N, Gupta YK. Effect of atorvastatin on pancreatic Beta-cell function and insulin resistance in type 2 diabetes mellitus patients: a randomized pilot study. *Can J Diabetes*. 2014 Dec;38(6):466-72. doi: 10.1016/j.jcjd.2014.01.006. Epub 2014 Jun 3. PubMed PMID: 24933106.

**OBJECTIVE:** Statins are commonly used for the management of dyslipidemia in type 2 diabetes mellitus patients. We hypothesized that atorvastatin could modulate the beta-cell function by altering the levels of proapoptotic and antiapoptotic lipoproteins and could also have an effect on insulin resistance. The aim of the present pilot study was to assess the effect of atorvastatin 10 mg on pancreatic beta-cell function and insulin resistance in patients with hyperlipidemia and type 2 diabetes by using the homeostasis model assessment-2 (HOMA2) index.

**METHODS:** Fifty-one type 2 diabetes patients receiving oral antidiabetes drugs, not taking statins, with baseline low-density lipoprotein cholesterol between 2.6 mmol/L and 4.1 mmol/L were included. Forty-three patients (21 in placebo group and 22 in atorvastatin group) completed the study and were taken up for final analysis. Fasting blood samples were obtained at baseline and at 12 weeks to determine levels of blood glucose, lipid profile, insulin, C-peptide and glycosylated hemoglobin (A1C).

**RESULTS:** Atorvastatin nonsignificantly increased fasting serum insulin (+14.29%,  $p=0.18$ ), accompanied by marginal nonsignificant increases in fasting plasma glucose and A1C. There was a decrease in HOMA2 percent beta-cell function (-2.9%,  $p=0.72$ ) and increase in HOMA2 insulin resistance (+14%,  $p=0.16$ ) in the atorvastatin group as compared with baseline, but the difference was not statistically significant.

**CONCLUSIONS:** Atorvastatin in the dose used failed to produce significant change in pancreatic beta-cell function and insulin resistance in type 2 diabetes patients as assessed by the HOMA2 index. The possible explanations include absence of lipotoxicity at prevailing levels of dyslipidemia at baseline or inadequacy of statin dose used in the study. (Clinical Trials Registry-India: CTRI/2008/091/000099).

Copyright © 2014 Canadian Diabetes Association. Published by Elsevier Inc. All rights reserved.

38: Goyal S, Deb KS, Elawadhi D, Kaw N. Substance abuse as a way of life in marginalized gender identity disorder: A case report with review of Indian literature. *Asian J Psychiatr*. 2014 Dec;12:160-2. doi: 10.1016/j.ajp.2014.08.004. Epub 2014 Sep 16. PubMed PMID: 25311662.

Persons suffering from gender identity disorder (GID) are often severely marginalized in India and mostly live outside the society as a part of a minority community called the Hijras. Although substance abuse is considered a way of life in them, such patients rarely seek treatment because of the stigma and fear of discrimination. We report a case of GID presenting to tertiary care centre for treatment of multiple substance use dependence (SUD). The case is the first to highlight the use and dependence of multiple substances in the Hijra community of India. Further, the case emphasizes that SUD treatment might be a worthwhile

intervention to bring such marginalized population under treatment, when further complicated issues on gender identity can be addressed.

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39: Gunasekaran S, Sharma N, Titiyal JS. Management of traumatic wound dehiscence of a functional graft 34 years after penetrating keratoplasty. *BMJ Case Rep.* 2014 Dec 2;2014. pii: bcr2014205903. doi: 10.1136/bcr-2014-205903. PubMed PMID: 25465456.

A functional corneal graft 34 years after penetrating keratoplasty (PKP) is rare and even rarer is its survival after wound dehiscence. We present a case of a 69-year-old man who had presented to the emergency services in January 2012 with corneal wound dehiscence OS extending to 8 o'clock following blunt trauma. His vision was perception of light. The best corrected visual acuity (BCVA) of the patient prior to graft dehiscence was 20/30. The patient had undergone optical penetrating keratoplasty for healed keratitis in OS in 1978 followed by phacoemulsification with intraocular lens implantation in 2009. Suturing of the graft was performed under topical anaesthesia. At 18 months follow-up, the BCVA was 20/60 with clear graft centrally and specular count was 865 cells/mm<sup>2</sup>. This case highlights that early and appropriate management of corneal graft dehiscence can achieve good functional outcome even 34 years following PKP.

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40: Gupta P, Khandpur S, VEDI K, Singh MK, Walia R. Xanthoma Disseminatum Associated with Inflammatory Arthritis and Synovitis-A Rare Association. *Pediatr Dermatol.* 2014 Dec 14. doi: 10.1111/pde.12388. [Epub ahead of print] PubMed PMID: 25496014.

Xanthoma disseminatum (XD) is a rare, benign, non-Langerhans cell histiocytosis characterized by disseminated xanthomatous lesions with a predilection for the face, flexures, and mucosae. Approximately 100 cases have been reported in the literature. We report XD in an 8-year-old boy with symmetric synovitis and arthritis involving the wrists and knees. This case is interesting in view of the association between arthritis and synovitis and XD, which to our knowledge has not been reported in the literature. This case has to be differentiated from multicentric histiocytosis, another non-Langerhans cell histiocytosis, in which joint involvement is common.

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41: Gupta S, Khokhar S, Agarwal T. A case of decentered IOL managed with optic buttonholing. *Int Ophthalmol.* 2014 Dec;34(6):1189-92. doi: 10.1007/s10792-014-0001-2. Epub 2014 Sep 17. PubMed PMID: 25227431.

We describe an unusual case which presented with late lateral IOL decentration secondary to bag sublucation in the presence of a posterior capsular defect. Instead of approaching the case with the usual IOL exchange with iris-fixated or anterior chamber IOL or by fixating it to the sclera, a relatively non-invasive sutureless method of IOL re-centration was performed by buttonholing the optic into the posterior capsular defect. It enabled a perfect IOL centration with minimal incidence of astigmatism, inflammation, macular edema, secondary glaucoma, or corneal decompensation.

42: Gupta YK, Pradhan AK, Goyal A, Mohan P. Compensation for clinical trial-related injury and death in India: challenges and the way forward. *Drug Saf.* 2014 Dec;37(12):995-1002. doi: 10.1007/s40264-014-0230-3. PubMed PMID: 25288194.

Clinical research, including clinical trials, is the bedrock of evidence-based medicine and is the most reliable method of generating credible data. Over the last decade, India has been one of the preferred destinations for clinical research activities. However, a couple of trials generated widespread media coverage due to alleged ethical transgressions, which generated debate among various stakeholders and dented the overall image of clinical research activities in the country. One of the major issues which has emerged is of compensation to research participants for clinical trial-related injury or death. To address this question, the Government of India has come up with regulations regarding compensation for research participants. While these rules provide a robust framework for compensation, some concerns have been raised regarding interpretation and implementation of these guidelines. In this article, we have tried to raise some debatable issues that need to be addressed to bring more clarity to this subject. These issues need to be handled in a balanced manner so that they are able to address the concerns of all stakeholders. It is envisaged that once clarity emerges, confidence in the clinical research process will be restored.

43: Iqbal N, Sharma A, Raina V, Kumar L, Bakhshi S, Kumar R, Gajendra S. Poor Response to Standard Chemotherapy in Early T-precursor (ETP)-ALL: A Subtype of T-ALL Associated with Unfavourable Outcome: A Brief Report. *Indian J Hematol Blood Transfus.* 2014 Dec;30(4):215-8. doi: 10.1007/s12288-013-0329-1. Epub 2014 Jan 19. PubMed PMID: 25435716; PubMed Central PMCID: PMC4243397.

Early T-precursor (ETP)-ALL, a type of T-ALL, is a new pathobiologic entity with distinct immunophenotype (CD1a(-), CD8(-), CD5(weak/absent) with stem-cell/myeloid markers) and genetic expression, poor response to standard intensive chemotherapy and very high risk of relapse. The genetic mutations typically associated with the pathogenesis of acute myeloid leukemia are seen with increased prevalence in ETP-ALL. No Indian data exists regarding this rare entity. Recently we have seen six cases of ETP-ALL and hereby reporting their clinical characteristics and treatment outcome. All patients were given induction chemotherapy according to standard protocols. Only one out of six patients could achieve remission after induction therapy. Rest five patients died because of their leukemia. This reflects the aggressive biology of this disease and its poor response to standard chemotherapy regimens generally used in T-ALL. The limited experience with ETP-ALL reflects whether rarity of this condition or failure to recognize this is not clear at this time. More studies are required to understand the basic biology of this disease and new therapeutic strategies need to be devised.

44: Jain D, Mathur SR, Iyer VK. Cell blocks in cytopathology: a review of preparative methods, utility in diagnosis and role in ancillary studies. *Cytopathology.* 2014 Dec;25(6):356-71. doi: 10.1111/cyt.12174. Epub 2014 Aug 11. PubMed PMID: 25113785.

The cell block (CB) is a routine procedure in cytopathology that has gained importance because of its pivotal role in diagnosis and ancillary studies. There is no precise review in the published literature that deals with the various methods of preparation of CB, its utility in diagnosis, immunocytochemistry (ICC) or molecular testing, and its drawbacks. An extensive literature search on CB in cytology using internet search engines was performed for this review employing the following keywords: cell block, cytoblock, cytology, cytopathology, methods,



preparation, fixatives, diagnostic yield, ancillary and molecular studies. Ever since its introduction more than a century ago, the CB technique has undergone numerous modifications to improve the quality of the procedure; however, the overall principle remains the same in each method. CBs can be prepared from virtually all varieties of cytological samples. In today's era of personalized medicine, cytological specimens, including CBs, augment the utility of cytological samples in analysing the molecular alterations as effectively as surgical biopsies or resection specimens. With the availability of molecular targeted therapy for many cancers, a large number of recent studies have used cytological material or CBs for molecular characterization. The various techniques of CB preparation with different fixatives, their advantages and limitations, and issues of diagnostic yield are discussed in this review.

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45: Jain K, Mohapatra T, Das P, Misra MC, Gupta SD, Ghosh M, Kabra M, Bansal VK, Kumar S, Sreenivas V, Garg PK. Sequential occurrence of preneoplastic lesions and accumulation of loss of heterozygosity in patients with gallbladder stones suggest causal association with gallbladder cancer. *Ann Surg*. 2014 Dec;260(6):1073-80. doi: 10.1097/SLA.0000000000000495. PubMed PMID: 24827397.

**BACKGROUND:** Causal association of gallbladder stones with gallbladder cancer (GBC) is not yet well established.

**OBJECTIVE:** To study the frequency of occurrence of preneoplastic histological lesions and loss of heterozygosity (LOH) of tumor suppressor genes in patients with gallstones.

**METHODS:** All consecutive patients with gallstones undergoing cholecystectomy from 2007-2011 were included prospectively. Histological examination of the gallbladder specimens was done for preneoplastic lesions. LOH at 8 loci, that is 3p12, 3p14.2, 5q21, 9p21, 9q, 13q, 17p13, and 18q for tumor suppressor genes (DUTT1, FHIT, APC, p16, FCMD, RB1, p53, and DCC genes) that are associated with GBC was tested from microdissected preneoplastic lesions using microsatellite markers. These LOH were also tested in 30 GBC specimens.

**RESULTS:** Of the 350 gallbladder specimens from gallstone patients, hyperplasia was found in 32%, metaplasia in 47.8%, dysplasia in 15.7%, and carcinoma in situ in 0.6%. Hyperplasia, metaplasia, and dysplasia alone were found in 11.7%, 24.6%, and 1.4% of patients, respectively. A combination of hyperplasia and dysplasia, metaplasia and dysplasia, and hyperplasia, metaplasia, and dysplasia was found in 3.4%, 6.3%, and 4.3% of patients, respectively. LOH was present in 2.1% to 47.8% of all the preneoplastic lesions at different loci. Fractional allelic loss was significantly higher in those with dysplasia compared with other preneoplastic lesions (0.31 vs 0.22;  $P = 0.042$ ). No preneoplastic lesion or LOH was found in normal gallbladders.

**CONCLUSIONS:** Patients with gallstones had a high frequency of preneoplastic lesions and accumulation of LOH at various tumor suppressor genes, suggesting a possible causal association of gallstones with GBC.

46: Jamshed N, Ozair FF, Aggarwal P, Ekka M. Utility of diagnosis of tuberculosis in an overcrowded emergency department. *J Emerg Med*. 2014 Dec;47(6):e158. doi: 10.1016/j.jemermed.2014.07.044. Epub 2014 Sep 27. PubMed PMID: 25271182.

47: Jha P, Pia Patric IR, Shukla S, Pathak P, Pal J, Sharma V, Thinagararanjan S, Santosh V, Suri V, Sharma MC, Arivazhagan A, Suri A, Gupta D, Somasundaram K, Sarkar C. Genome-wide methylation profiling identifies an essential role of

reactive oxygen species in pediatric glioblastoma multiforme and validates a methylome specific for H3 histone family 3A with absence of G-CIMP/isocitrate dehydrogenase 1 mutation. *Neuro Oncol.* 2014 Dec;16(12):1607-17. doi: 10.1093/neuonc/nou113. Epub 2014 Jul 4. PubMed PMID: 24997139; PubMed Central PMCID: PMC4232083.

**BACKGROUND:** Pediatric glioblastoma multiforme (GBM) is rare, and there is a single study, a seminal discovery showing association of histone H3.3 and isocitrate dehydrogenase (IDH)1 mutation with a DNA methylation signature. The present study aims to validate these findings in an independent cohort of pediatric GBM, compare it with adult GBM, and evaluate the involvement of important functionally altered pathways.

**METHODS:** Genome-wide methylation profiling of 21 pediatric GBM cases was done and compared with adult GBM data (GSE22867). We performed gene mutation analysis of IDH1 and H3 histone family 3A (H3F3A), status evaluation of glioma cytosine-phosphate-guanine island methylator phenotype (G-CIMP), and Gene Ontology analysis. Experimental evaluation of reactive oxygen species (ROS) association was also done.

**RESULTS:** Distinct differences were noted between methylomes of pediatric and adult GBM. Pediatric GBM was characterized by 94 hypermethylated and 1206 hypomethylated cytosine-phosphate-guanine (CpG) islands, with 3 distinct clusters, having a trend to prognostic correlation. Interestingly, none of the pediatric GBM cases showed G-CIMP/IDH1 mutation. Gene Ontology analysis identified ROS association in pediatric GBM, which was experimentally validated. H3F3A mutants (36.4%; all K27M) harbored distinct methylomes and showed enrichment of processes related to neuronal development, differentiation, and cell-fate commitment.

**CONCLUSIONS:** Our study confirms that pediatric GBM has a distinct methylome compared with that of adults. Presence of distinct clusters and an H3F3A mutation-specific methylome indicate existence of epigenetic subgroups within pediatric GBM. Absence of IDH1/G-CIMP status further indicates that findings in adult GBM cannot be simply extrapolated to pediatric GBM and that there is a strong need for identification of separate prognostic markers. A possible role of ROS in pediatric GBM pathogenesis is demonstrated for the first time and needs further evaluation.

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48: Jose B, Lodha R, Kabra SK. Comparison of two new generation pulse oximeters with arterial oxygen saturation in critically ill children. *Indian J Pediatr.* 2014 Dec;81(12):1297-301. doi: 10.1007/s12098-014-1381-z. Epub 2014 Mar 15. PubMed PMID: 24627281.

**OBJECTIVES:** To compare the performance of two new generation pulse oximeters, one with enhanced signal extraction technology (SET) and other without enhanced SET in detecting hypoxemia and to correlate it with arterial blood gas analysis.

**METHODS:** Forty-eight patients, admitted to pediatric intensive care unit (PICU) of a tertiary care teaching hospital in India for critical care and support during the study period, who had an arterial catheter in situ were included. Children with those disease conditions known to interfere with pulse oximetry and blood gas analysis were excluded. 184 set of observations were made during the study period. Each set had oxygen saturation (SpO<sub>2</sub>) measured from both the pulse

oximeters and the corresponding arterial oxygen saturation (SaO<sub>2</sub>). The values were compared for occurrence of true and false alarms during periods of normal BP, hypotension and varying degrees of hypoxia.

**RESULTS:** The mean arterial SaO<sub>2</sub> in the study was 94.4 %±4.9. The mean SpO<sub>2</sub> recorded in conventional and enhanced signal extraction technology (SET) pulse oximeters were 94.9 %±4.5 and 97.2 %±4.7 respectively. Enhanced signal extraction technology pulse oximeter detected 4/27 (15 %) of true hypoxemic events and 1 event was a false alarm. Conventional pulse oximeter detected 11/27 (41 %) true hypoxemic events but recorded 6 false alarms.

**CONCLUSIONS:** Both pulse oximeters were not found to be performing satisfactorily in picking up hypoxemia in the study. There was good correlation with mean SpO<sub>2</sub> from pulse oximeters and arterial SaO<sub>2</sub>. The reliability of pulse oximetry decreases with worsening hypoxemia and hypotension, and the sensitivity for picking up hypoxemia can be as low as 15 %.

49: Kakkar A, Gupta RK, Dash NR, Afshan I, Suri V. Lymphoepithelioma-Like Carcinoma of the Stomach with Incidental Gastrointestinal Stromal Tumor (GIST)-A Rare Synchrony of Two Tumors. *J Gastrointest Cancer*. 2014 Dec;45 Suppl 1:120-4. doi: 10.1007/s12029-014-9581-3. PubMed PMID: 24567007.

50: Kapil U, Bhadoria AS, Sareen N. Reappearance of Bitot's Spots after Complete Resolution in Children between 1 and 5 Years of Age. *J Trop Pediatr*. 2014 Dec 24. pii: fmu074. [Epub ahead of print] PubMed PMID: 25539777.

There is limited data on proportion of Bitot's spots (BS), which could reappear after receiving mega dose of Vitamin A (MDVA), and their complete resolution. A prospective, community-based, cohort study with 12 months follow-up was conducted among children (1-5 years) with BS at a district from North India. On diagnosis, 200000IU of vitamin A was administered on the same day, then after 4 weeks and subsequently after 6 months. Out of 262 children with BS, 157 (59.9%, 95% CI: 54.1-65.9) children had shown resolution of BS after the MDVA supplementation. Out of 157 children, 97 (61.8%, 95% CI: 54.2-69.4) had reappearance of BS after complete resolution. Kaplan-Meier analysis found that median duration of reappearance of BS was 5 months (95% CI: 3.8-6.2) after their complete resolution. The reappearance of BS after administration of two MDVA within 12 months suggests that children with possibly adequate serum retinol level status may have reappearance of BS.

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51: Kapoor P, Kharbanda OP, Monga N, Miglani R, Kapila S. Effect of orthodontic forces on cytokine and receptor levels in gingival crevicular fluid: a systematic review. *Prog Orthod*. 2014 Dec 9;15:65. doi: 10.1186/s40510-014-0065-6. PubMed PMID: 25487828; PubMed Central PMCID: PMC4259981.

This systematic review aimed to generate evidence on role of potent markers of inflammation [cytokines, chemokines, their associated receptors and antagonists] following the application of orthodontic forces. Subsequent to registration with PROSPERO, literature search followed a predetermined search strategy to key databases along with hand search (HS). Seventy-seven articles from PubMed (P), 637 from Scopus (S), 51 from Embase (E), and 3 from hand search (HS) were identified. A total of 39 articles were shortlisted that met strict inclusion and exclusion criteria and quality assessment. Each study was evaluated for participant characteristics, study design, oral hygiene regimen, and gingival

crevicular fluid (GCF) handling. Among these studies, biomarkers in the order of frequency were interleukin (IL)-1 $\beta$  (N=21), tumor necrosis factor (TNF)- $\alpha$  (N=10), IL-8, IL-6 (N=8), receptor activator of nuclear factor kappa-B ligand (RANKL) (N=7), monocyte chemoattractant protein (MCP)-1 (N=3), IL-2 (N=4), IL-4, IL-10, RANTES (N=2), IL-1, IL-5, IL-1 $\alpha$ , IP-10, osteopontin (OPN) (N=1) and receptors and their antagonists in the order of osteoprotegerin (OPG) (N=8), IL-1RA (N=5), and RANK (N=1). Results revealed an immediate release of inflammatory bone-resorptive mediators, IL-1 $\beta$  and TNF- $\alpha$ , where IL-1 $\beta$  increased as early as 1 min to 1 h reaching peak at 24 h while TNF- $\alpha$  increased at 1 h or 1 day. This was accompanied by a fall in bone-protective mediator (OPG) levels at 1 h and 24 h after orthodontic force application. Continuous forces were accompanied by a decrease in mediator levels after attaining peak levels (most commonly at 24 h) while repeated activations in interrupted force upregulated their secretion. Significant correlations of IL-1 $\beta$  levels with pain intensity, rate of orthodontic tooth movement (OTM) and of activity index (AI) (IL-1 $\beta$ /IL-1RA) with velocity of tooth movement and growth status of individuals have also been deduced. A greater AI and RANKL/OPG ratio was seen in juveniles as compared to adults or non-growers that were associated with faster rate of OTM in juveniles. None of the studies addressed the effect of estrous cycle in female subjects. Lack of homogeneity in several parameters calls for a better controlled research on the biology of OTM.

52: Kaur J, Malik MA, Gulati R, Azad SV, Goswami S. Genetic determinants of uveal melanoma. *Tumour Biol.* 2014 Dec;35(12):11711-7. doi: 10.1007/s13277-014-2681-7. Epub 2014 Oct 9. PubMed PMID: 25296731.

Melanoma of the uveal tract is the most common primary intraocular tumor in adults. With advances in genetic research and the open source access of genetic databases, new insights are emerging into the molecular changes of this cancer. As with most other tumors, the driving force behind such research is the hope of finding and developing new modalities for therapeutic purposes, prognosticating disease and understanding risk factors for metastasis. With advances in proteomics, cytogenetics and gene profiling, the stage is set to unearth the underlying genetic basis which can in the future be a target of therapeutic modalities. This article describes the cytogenetic, molecular pathogenesis, and prognostic factors along with the most important findings and their attribution to current and future management of uveal melanoma.

53: Khilnani GC, Jain N. Do we need a protocol for weaning patients from noninvasive ventilation? *Indian J Crit Care Med.* 2014 Dec;18(12):775-7. doi: 10.4103/0972-5229.146298. PubMed PMID: 25538410; PubMed Central PMCID: PMC4271275.

54: Khokhar S, Sharma R, Patil B, Aron N, Gogia SG. Response to: 'A different approach for manual foldable IOL injection for keeping wound size and integrity'. *Eye (Lond).* 2014 Dec 19. doi: 10.1038/eye.2014.301. [Epub ahead of print] PubMed PMID: 25523203.

55: Krishnamurthy S, Pathy S, Ahmed I, Chander S. Comments on - Vaginal dose point reporting in cervical cancer patients treated with combined 2D/3D external beam radiotherapy and 2D/3D brachytherapy. *Radiother Oncol.* 2014 Dec;113(3):426. doi: 10.1016/j.radonc.2014.05.006. Epub 2014 Jun 12. PubMed PMID: 24931293.

56: Kumar A, Pandit AK, Vivekanandhan S, Srivastava MV, Tripathi M, Prasad K. Association between beta-1 adrenergic receptor gene polymorphism and ischemic

stroke in North Indian population: A case control study. *J Neurol Sci.* 2014 Dec 8. pii: S0022-510X(14)00768-0. doi: 10.1016/j.jns.2014.12.003. [Epub ahead of print] PubMed PMID: 25510377.

Stroke is a multi-factorial disease caused by a combination of genetic and environmental factors. The purpose of this case control study was to determine the relationship of beta-1 adrenergic receptor polymorphism with ischemic stroke in North Indian population. In this study, 224 patients and 224 age- and sex-matched controls were recruited from the outpatient department and neurology ward of All India Institute of Medical Sciences, New Delhi. Genotyping was performed by using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) method. PCR results were confirmed by DNA sequencing. Frequency distributions of genotypes and alleles were compared between cases and controls using logistic regression. Mean age of cases and controls was  $53.9 \pm 13.4$  and  $53.6 \pm 12.9$  years respectively. Multivariate logistic regression analysis showed an independent association between Ser49Gly polymorphism and ischemic stroke under a dominant model of inheritance (OR, 2.5; 95% CI, 1.2 to 5) and large vessel disease (LVD) under a recessive model of inheritance (OR, 6.5; 95% CI, 1.7 to 23;  $P=0.005$ ). Independent association of Arg389Gly polymorphism with small vessel disease (SVD) (OR, 7.09; 95% CI, 1.9 to 25;  $P=0.003$ ) under recessive model of inheritance. The findings of the present study Ser49Gly polymorphism of the ADRB1 gene confer higher risk of ischemic stroke in a North Indian population and especially in patients with LVD. Our findings also show that Arg389Gly polymorphism of ADRB1 confers higher risk of SVD in North Indian population.

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57: Kumar A, Gogia V, Kumar P, Sehra S, Gupta S. Evaluation of predictors for anatomical success in macular hole surgery in Indian population. *Indian J Ophthalmol.* 2014 Dec;62(12):1141-5. doi: 10.4103/0301-4738.149135. PubMed PMID: 25579358.

**PURPOSE:** The aim was to evaluate outcomes and predictors for anatomical success in macular hole (MH) surgery.

**MATERIALS AND METHODS:** This was a prospective cohort study of patients operated for idiopathic MH with stages II, III or IV. Patients underwent pars plana vitrectomy with internal limiting membrane (ILM) peeling, internal gas tamponade, and postoperative face down positioning. The primary outcome measure was anatomical closure of MH, while secondary outcome measure was postoperative external limiting membrane (ELM) continuity. Effect of MH size, duration of MH, size of ILM peel, type of gas tamponade (SF6 vs. C3F8) and macular hole index (MHI) on anatomical MH closure was also evaluated.

**RESULTS:** Of the 62 eyes operated, anatomical closure of MH was achieved in 55 eyes (88.7%). The median duration of follow-up was 8 months (range: 6-15 months). Mean BVCA improved from  $0.94 \pm 0.26$  at baseline to  $0.40 \pm 0.23$  logMAR at last follow-up ( $P = 0.01$ ). There was a statistically significant association between size of ILM peel and anatomical closure of MH ( $P = 0.04$ ). Duration of symptoms, size of MH, type of gas tamponade, MHI had no effect on anatomical closure ( $P = 0.22, 0.28, 0.40$  respectively, Chi-square test). Postoperative continuity of the ELM was significantly associated with a shorter symptom duration (<6 months) before surgery.

**CONCLUSION:** Acceptable anatomical closure could be attained with the defined technique. Size of ILM peel is a new predictor of anatomical success while symptom duration affects postoperative ELM continuity.

58: Kumar A, Prasad K, Vivekanandhan S, Srivastava A, Goswami S, Srivastava MV, Tripathi M. Association between angiotensin converting enzyme gene insertion/deletion polymorphism and intracerebral haemorrhage in North Indian population: a case control study and meta-analysis. *Neurol Sci.* 2014 Dec;35(12):1983-90. doi: 10.1007/s10072-014-1877-3. Epub 2014 Jul 14. PubMed PMID: 25016961.

The purpose of this study was to determine the relationship between Angiotensin converting enzyme (ACE) insertion/deletion polymorphism and ICH with an ACE level in a North Indian population. Patient with ICH and age- and sex- matched control subjects were recruited. Case control study design was used. Genotyping was performed by using Polymerase chain reaction. Serum ACE levels were measured by colorimetric method. Our results were integrated with other reported studies across different countries in a meta-analysis. One hundred and six patients with ICH and 106 age- and sex- matched control subjects were recruited. Mean age of cases and control subjects were  $53.4 \pm 1$  and  $52.9 \pm 13.4$ , respectively. The DD genotypes were more frequency distributed in cases compared with controls (OR 2; 95 % CI, 1.02-3.8,  $P = 0.04$ ) under a recessive model of inheritance. Meta-analysis suggests significant association between ACE I/D polymorphism and risk of ICH (OR 1.98; 95 % CI, 1.53-2.57) under the recessive model of inheritance and under the dominant model of inheritance (OR 1.31; 95 % CI, 1.18-1.45). The findings of the present study show a significant association between ACE insertion/deletion polymorphism and ICH. Meta-analysis indicate that ACE I/D polymorphism may be a susceptible marker for risk factor of ICH in Asian population.

59: Kumar M, Singh P, Tripathi J, Srivastava A, Tripathi MK, Ravi AK, Asthana RK. Identification and structure elucidation of antimicrobial compounds from *Lyngbya aestuarii* and *Aphanothece bullosa*. *Cell Mol Biol (Noisy-le-grand)*. 2014 Dec 24;60(5):82-9. PubMed PMID: 25535717.

Cyanobacteria are known to produce array of compounds. In an earlier report, we reported antibacterial and antifungal activities in methanolic crude extracts of laboratory grown *Lyngbya aestuarii* and *Aphanothece bullosa* isolated from Chilka Lake and local paddy field respectively. In this report the same methanolic crude extracts were subjected to TLC purification twice by altering the solvents and UV-illuminated bands bioassayed. Such UV illuminated potent bands obtained after 2nd TLC were subjected to spectroscopic analysis (UV, IR, <sup>1</sup>H NMR and LCMS/MS). We have screened malyngolide and dragonamide C from *L. aestuarii* and a diterpenoid and majusculoic acid from *A. bullosa*. Dragonamide C and malyngolide were found to be antifungal while majusculoic acid and a diterpenoid as antibacterial. As far as our knowledge goes, this is the first ever report where fresh water *A. bullosa* was found to be a source of diterpenoid and majusculoic acid. Likewise, *L. aestuarii* was also established as a source of malyngolide and dragonamide C. This again indicated that cyanobacteria are inherently endowed with the capacity to produce metabolites according to niche and species specific manner emphasising fresh water cyanobacterial strain are as important as marine one.

60: Kumar M, Thakur S, Puri A, Shukla S, Sharma S, Perumal V, Chawla R, Gupta U. Fetal renal anomaly: Factors that predict survival. *J Pediatr Urol.* 2014 Dec;10(6):1001-7. doi: 10.1016/j.jpuro.2014.11.007. Epub 2014 Nov 12. PubMed PMID: 25486943.

OBJECTIVE: To find out the relative prevalence of renal anomalies detected in the antenatal period, and to look at factors that predict the postnatal outcome.

**METHODS:** In this prospective study, all antenatal-detected renal anomalies booked at the tertiary health centre were evaluated and counselled. Aspects such as type of renal anomaly, oligohydramnios and presence of additional anomalies were noted. Stillborn babies underwent autopsy; all live born babies were followed for one year. Appropriate statistical analyses were performed to compare the antenatal factors with outcomes.

**RESULTS:** Renal anomalies were detected in 136 out of 587 cases with major fetal anomalies. Most of the women were primiparous (65.4%). The mean gestation at presentation was 30 weeks; in 12 cases, diagnosis was possible before 20 weeks (8.8%). Antenatal hydronephrosis was the most commonly seen anomaly, with 61 cases; this was followed by bilateral cystic kidney in 50 cases. Out of the 136 cases, 12 (8.8%) underwent termination of pregnancy and 60 (44.1%) babies were stillborn. Autopsy was performed in 58 out of 72 (80.6%) cases after consent. Karyotyping was performed in 49 cases and abnormalities were detected in two (4.1%) of them. A total of 64 (47.1%) babies were live born; after one year, 49 (36.0%) of them were alive. Postnatal survival was highest in unilateral disease (85.7%). In cases with oligohydramnios, there was only 3.4% survival after one year; none of the cases with cystic kidney and oligohydramnios survived. The period of gestation at presentation of non-survivors was 25.9 weeks compared to 32.5 weeks with survivors. Among the cases with extra renal anomaly, 7.0% survived; none of the cases with associated cranio-vertebral defect or polydactyly survived after a year.

**CONCLUSION:** Out of the different renal pathologies that were diagnosed, survival was highest in the unilateral group. The factors associated with poor prognosis included bilateral disease, absence of amniotic fluid and presence of associated malformation.

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61: Kumar P, Pandya D, Singh N, Behera D, Aggarwal P, Singh S. Loop-mediated isothermal amplification assay for rapid and sensitive diagnosis of tuberculosis. *J Infect.* 2014 Dec;69(6):607-15. doi: 10.1016/j.jinf.2014.08.017. Epub 2014 Sep 9. PubMed PMID: 25218428.

**OBJECTIVES:** Loop-mediated isothermal amplification (LAMP) is a newly developed molecular method that can be performed isothermally. We developed and evaluated a LAMP assay using novel primers to diagnose tuberculosis directly from clinical samples.

**MATERIALS:** Primers were designed to amplify the specific novel *esat-6* gene target of *Mycobacterium tuberculosis* (MTB). Quantitated DNA was used to determine analytical sensitivity and specificity was evaluated by testing 29 NTM and 37 other bacterial species. After standardization, its sensitivity and specificity were evaluated on samples from 118 TB suspected and 31 non-TB patients and compared it with smear, culture and mPCR methods.

**RESULTS:** LAMP was able to detect 5 fg DNA (one MTB) within 21 min and found to be 10 times more sensitive than mPCR and showed 100% specificity against NTM and other bacterial species. In clinical samples, LAMP showed highest MTB detection rate (52.5%) as compared to mPCR (44%) and culture (30.5%). On culture positive and mPCR positive samples, the sensitivity of LAMP was found to be 100% (95% CI 90.2-100) and 96.1% (95% CI 86.7-99.5) respectively with 93.5% (95% CI 78.5-99.2) of overall specificity.

**CONCLUSION:** LAMP was found to be more sensitive than culture and mPCR for the

detection of MTB. It showed specificity comparable to mPCR but was rapid and cost effective.

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62: Kumar R, Mohan N, Upadhyay AD, Singh AP, Sahu V, Dwivedi S, Dey AB, Dey S. Identification of serum sirtuins as novel noninvasive protein markers for frailty. *Aging Cell*. 2014 Dec;13(6):975-80. doi: 10.1111/acel.12260. Epub 2014 Aug 7. PubMed PMID: 25100619.

Frailty has emerged as a major health issue among older patients. A consensus on definition and diagnosis is yet to be achieved. Various biochemical abnormalities have been reported in frailty. Activation of sirtuins, a conserved family of NAD-dependent proteins, is one of the many mimics of calorie restriction which improves lifespan and health in experimental animals. In this cross-sectional study, we assessed the circulating sirtuin levels in 119 (59.5%) nonfrail and 81 (40.5%) frail individuals, diagnosed by Fried's criteria. Serum SIRT1, SIRT2, and SIRT3 were estimated by surface plasmon resonance (SPR) and Western blot. Serum sirtuins level in mean±SD; SIRT1 (nonfrail  $-4.67 \pm 0.48$  ng/μL; frail  $-3.72 \pm 0.48$  ng/μL;  $P < 0.0001$ ), SIRT2 (nonfrail  $-15.18 \pm 2.94$  ng/μL; frail  $-14.19 \pm 2.66$  ng/μL;  $P = 0.016$ ), and SIRT3 (nonfrail  $-7.72 \pm 1.84$  ng/μL; frail  $-6.12 \pm 0.97$  ng/μL;  $P < 0.0001$ ) levels were significantly lower among frail patients compared with the nonfrail. In multivariable regression analysis, lower sirtuins level were significantly associated with frailty after adjusting age, gender, diabetes mellitus, hypertension, cognitive status (Mini Mental State Examination scores) and number of comorbidities. For detecting the optimum diagnostic cutoff value a ROC analysis was carried out. The area under curve for SIRT1 was 0.9037 (cutoff  $-4.29$  ng/μL; sensitivity  $-81.48\%$ ; specificity  $-79.83\%$ ) and SIRT3 was 0.7988 (cutoff  $-6.61$  ng/μL; sensitivity  $-70.37\%$ ; specificity  $-70.59\%$ ). This study shows that lower circulating SIRT1 and SIRT3 levels can be distinctive marker of frailty.

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63: Kumar S, Gupta V, Srivastava N, Gupta V, Mishra S, Mishra S, Natu Shankar M, Roy U, Chandra A, Negi MP, Kumar S. Resistin 420C/G gene polymorphism on circulating resistin, metabolic risk factors and insulin resistance in adult women. *Immunol Lett*. 2014 Dec;162(2 Pt B):287-91. doi: 10.1016/j.imlet.2014.07.009. Epub 2014 Aug 1. PubMed PMID: 25088792.

**OBJECTIVE:** To investigate the frequency association between resistin gene polymorphism with its circulating levels, metabolic risk factor and insulin resistance in adult women.

**DESIGN:** Totally 615 subjects were enrolled for the study, 305 women were with metabolic syndrome and 310 women were without metabolic syndrome according to NCEP-ATP III criteria. Fasting circulatory level of resistin, insulin, plasma glucose and lipid profiles were estimated along with calculation of insulin resistance. Resistin 420C/G promoter region polymorphism was done by RFLP method.

**RESULTS:** Variant genotype (CC vs CG+GG) ( $p < 0.001$ : OR=2.22: 95% CI=1.60-3.10) of 420C/G resistin gene polymorphism was less frequently observed in control population. Further dividing subjects into two groups according to absence (Resistin -1) or presence (Resistin-2) of the G allele, significantly high levels of triglyceride ( $p < 0.001$ ), plasma glucose ( $p = 0.012$ ), systolic blood pressure ( $p < 0.001$ ), diastolic blood pressure ( $p < 0.001$ ), waist hip ratio ( $p < 0.001$ ), body



mass index ( $p < 0.001$ ) and resistin ( $p < 0.001$ ), were observed in resistin-2 group.

**CONCLUSION:** Present study shows that 420C/G polymorphism of resistin gene directly correlated to its high circulating level and metabolic risk factors, specifically markers of obesity and atherosclerosis, so it may have an important role in the development of metabolic syndrome and cardio metabolic diseases.

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64: Lakshmy R, Tarik M, Abraham RA. Role of dried blood spots in health and disease diagnosis in older adults. *Bioanalysis*. 2014 Dec;6(23):3121-31. doi: 10.4155/bio.14.242. PubMed PMID: 25529881.

Older adults represent a substantial number of the world population, which is set to grow considerably in the coming years. The health challenges faced by the older adults are unique. Several age-related changes in them make phlebotomy difficult. Application of dried blood has been demonstrated to be useful in the other similarly vulnerable population, the neonates. Similar approach of standardization and demonstration of use of dried blood spots (DBS) for analytes of interest in older adult population would be highly appreciated. There are very few reports of use of DBS in older adults. There are several potential areas of interest for older adults in which DBS assays are available but have not been applied for screening in them. This review describes a brief general overview of DBS, its advantages and disadvantages and potential use in disease diagnosis in older adults.

65: Mahajan D, Sharma R, Garg SP, Venkatesh P, Sihota R, Dada T. Clinical profile of uveitis-related ocular hypertension. *Int Ophthalmol*. 2014 Dec;34(6):1221-6. doi: 10.1007/s10792-014-0008-8. Epub 2014 Oct 10. PubMed PMID: 25301079.

The purpose of this article is to study the clinical and demographic profile of uveitis-related ocular hypertension (OHT) and evaluate risk factors predisposing to development of OHT in uveitis. Two hundred patients (200 eyes) with uveitis were evaluated for type of uveitis and the presence of OHT [IOP > 21 mmHg]. All patients underwent a complete ophthalmic examination and appropriate systemic evaluation. Patients with OHT were started on appropriate antiglaucoma medication and were followed up for minimum of 6 months. Forty-two eyes (21 %) were found to have OHT. Anterior uveitis alone was seen in 22 (52.4 %), granulomatous uveitis was seen in 8 (19.1 %) eyes, while 13 eyes (30.9 %) had active uveitis. On multiple logistic regression, age greater than 60 years ( $p = 0.025$ ), peripheral anterior synechiae (PAS) > 180° ( $p = 0.029$ ), and steroid use ( $p < 0.001$ ) were found to have significant association with OHT. Mean IOP at baseline was  $24.6 \pm 10.1$  mmHg which decreased to  $17.3 \pm 4.5$  mmHg at 6 months ( $p < 0.001$ ). At 6 months, 30 eyes were medically controlled (71.4 %), 5 eyes underwent trabeculectomy with MMC (11.9 %), and in 7 eyes, antiglaucoma medication could be discontinued. One-fifth of eyes with uveitis had OHT. Risk factors for IOP elevation included increased age, PAS > 180°, and corticosteroid use.

66: Maharaja K, Gupta V, Khandpur S. Nonhealing Tongue Ulcer in an Indian Man. *JAMA Dermatol*. 2014 Dec 23. doi: 10.1001/jamadermatol.2014.3399. [Epub ahead of print] PubMed PMID: 25535972.

67: Malik S, Suchal K, Gamad N, Dinda AK, Arya DS, Bhatia J. Telmisartan ameliorates cisplatin-induced nephrotoxicity by inhibiting MAPK mediated inflammation and apoptosis. *Eur J Pharmacol*. 2014 Dec 13;748C:54-60. doi: 10.1016/j.ejphar.2014.12.008. [Epub ahead of print] PubMed PMID: 25510231.

Nephrotoxicity is a major adverse effect of the widely used anticancer drug

cisplatin. Oxidative stress, inflammation and apoptosis are implicated in the pathophysiology of cisplatin-induced acute renal injury. Moreover, cisplatin activates many signal transduction pathways involved in cell injury and death, particularly mitogen activated protein kinase (MAPK) pathway. With this background, we aimed to investigate the protective effect of telmisartan, a widely used antihypertensive drug, in cisplatin-induced nephrotoxicity model in rats. To accomplish this, male albino wistar rats (150-200g) were divided into 6 groups: Normal, cisplatin-control, telmisartan (2.5, 5 and 10mg/kg) and telmisartan per se treatment groups. Normal saline or telmisartan was administered orally to rats for 10 days and cisplatin was given on 7th day (8mg/kg; i.p.) to induce nephrotoxicity. On 10th day, rats were killed and both the kidneys were harvested for biochemical, histopathological and molecular studies. Cisplatin injected rats showed depressed renal function, altered prooxidant-antioxidant balance and acute tubular necrosis which was significantly normalized by telmisartan co-treatment. Furthermore, cisplatin administration activated MAPK pathway that caused tubular inflammation and apoptosis in rats. Telmisartan treatment significantly prevented MAPK mediated inflammation and apoptosis. Among the three doses studied telmisartan at 10mg/kg dose showed maximum nephroprotective effect which could be due to maintenance of cellular redox status and inhibition of MAPK activation.

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68: Mallick S, Roy S, Benson R, Das S, Julka PK, Rath GK. Rare Sites of Metastasis From Gall Bladder Carcinoma. *J Gastrointest Cancer*. 2014 Dec 4. [Epub ahead of print] PubMed PMID: 25471488.

69: Mandal A, Kabra SK. Sweat Chloride Levels in Asthma. *Indian J Pediatr*. 2014 Dec 28. [Epub ahead of print] PubMed PMID: 25543184.

70: Meena S, Sharma P, Gangary SK, Chowdhury B. Role of vitamin C in prevention of complex regional pain syndrome after distal radius fractures: a meta-analysis. *Eur J Orthop Surg Traumatol*. 2014 Dec 9. [Epub ahead of print] PubMed PMID: 25488053.

**BACKGROUND:** Complex regional pain syndrome is a well-known complication after distal radius fracture with incidence ranging from 10.5 to 37 %. Some studies recommend the use of vitamin C to prevent complex regional pain syndrome. The objective of this meta-analysis was to evaluate the efficacy of vitamin C in prevention of CRPS.

**METHODS:** We searched the PubMed, EMBASE and Cochrane library databases for randomized controlled trial (RCT) and comparative studies reporting use of vitamin C to prevent distal radius fracture. Dichotomous variable was presented as risk ratio with 95 % confidence intervals.

**RESULTS:** We obtained 220 articles from the database search. After the exclusion of duplicates, unrelated articles, letter to editor and editorials, we found four articles relevant to our topic. Meta-analysis of the CRPS incidence revealed that the incidence of CRPS was significantly lower in the vitamin C group [RD 0.41 (0.19-0.92), P = 0.03]. There was moderate to high heterogeneity in the studies included  $I^2 = 63\%$ .

**CONCLUSIONS:** Our analysis showed a significant reduction in prevalence of CRPS with the use of vitamin C. Further high-quality RCTs with standard dosages and common diagnostic criteria are needed to be able to deliver solid conclusions.

71: Mohanty D, Dalal AK, Garg PK. Moderate intra-abdominal free fluid on computed tomogram in patients with blunt trauma abdomen: time to shun non-operative approach. *World J Surg.* 2014 Dec;38(12):3284. doi: 10.1007/s00268-014-2731-8. PubMed PMID: 25123182.

72: Muhammad Aslam MK, Kumaresan A, Sharma VK, Tajmul M, Chhillar S, Chakravarty AK, Manimaran A, Mohanty TK, Srinivasan A, Yadav S. Identification of putative fertility markers in seminal plasma of crossbred bulls through differential proteomics. *Theriogenology.* 2014 Dec;82(9):1254-1262.e1. doi: 10.1016/j.theriogenology.2014.08.007. Epub 2014 Aug 28. PubMed PMID: 25258256.

Sub-fertility is a major problem in crossbred bulls leading to disintegration of breeding systems and huge economic loss. Identification of some potential biomarkers to determine the latent fertility of bulls accurately has long been the interest of researchers. In this study, we analyzed the proteome of seminal plasma (SP) from bulls with varying fertility to identify the fertility-associated proteins. The proteomic profile of high- and low-fertile bulls was compared by two-dimensional difference gel electrophoresis and differentially expressed proteins were identified through matrix-assisted laser desorption/ionization-time of flight/mass spectrometry. Out of the 18 differentially expressed proteins ( $P < 0.05$ ), 9 were overexpressed in SP of high-fertile bulls and 9 were overexpressed in SP of low-fertile bulls. The differential expressions ranged from 1.5- to 5.5-fold between the two groups, where protection of telomeres-1 protein (POT1) was highly overexpressed (2.9-fold) in high-fertile group and prostaglandin E2 receptor EP3 (PTGER3) was highly abundant (5.5-fold) in low-fertile group. The protein interaction network was elucidated using STRING software tool, and the functional bioinformatics analysis was done using Blast2Go software. Most of the differentially expressed proteins were found to be involved in cellular processes and biological regulation with binding and catalytic function. It is inferred that the expression of certain proteins in the SP varied with bull fertility, and concurrent appraisal of their expression along with other fertility assays may help in determining bull fertility.

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73: Munawwar A, Sharma SK, Gupta S, Singh S. Seroprevalence and Determinants of Kaposi Sarcoma-Associated Human Herpesvirus 8 in Indian HIV-Infected Males. *AIDS Res Hum Retroviruses.* 2014 Dec;30(12):1192-6. doi: 10.1089/aid.2014.0184. PubMed PMID: 25375960; PubMed Central PMCID: PMC4250948.

Abstract In India Kaposi's sarcoma is rarely seen in AIDS patients. Hence the current belief is that the incidence of human herpesvirus-8 (HHV-8) is very low in this subcontinent, most probably due to the heterosexual route of HIV transmission. However, there is a scarcity of data on the prevalence of HHV-8 in India. In India the primary mode of HIV transmission is the heterosexual route. Therefore we aimed to determine the prevalence of antibodies against HHV-8 in North Indian HIV-infected men naive of antiretroviral therapy (ART). In a prospective study, 165 Indian adult males were recruited from an ART clinic. Blood samples were collected before administering any antiretroviral drug. The sera were tested for antibodies against HHV-8 using a commercial enzyme-linked immunosorbent assay (ELISA) kit, which detects IgG antibodies to lytic antigens of HHV-8. All positive samples were confirmed for the presence of anti-HHV-8 antibodies using an indirect immunofluorescence assay (IFA). The IFA kit is intended to detect primary, latent, persistent, or reactivated infection of HHV-8. Of the 165 males, 43 (26.06%) were positive by ELISA while 26 (15.8%) were also positive by IFA. Seroprevalence decreased with increasing age ( $p < 0.05$ ).

Factors independently associated with HHV-8 infection were younger age group and alcohol consumption. These findings suggest that even in a heterosexual population, HHV-8 can be transmitted frequently.

74: Nambirajan A, Bhowmik D, Singh G, Agarwal SK, Dinda AK. Monoclonal gammopathy of renal significance with light-chain deposition disease diagnosed postrenal transplant: a diagnostic and therapeutic challenge. *Transpl Int*. 2014 Dec 1. doi: 10.1111/tri.12497. [Epub ahead of print] PubMed PMID: 25441103.

Patients with light-chain deposition disease (LCDD) frequently do not meet criteria for myeloma. In such cases, despite low tumor burden, the circulating monoclonal immunoglobulins cause renal damage, are responsible for post-transplant recurrence, and are rightly categorized as monoclonal gammopathy of renal significance (MGRS) requiring chemotherapy. A 65-year male with uncharacterized nodular glomerulopathy presented with proteinuria 3 years postrenal transplant. His allograft biopsies were diagnostic of light-chain deposition disease (likely recurrent), and in the absence of myeloma, he was labeled as MGRS. Based on the limited literature available, he was treated with bortezomib which resulted in normalization of serum-free light-chain ratios and resolution of proteinuria. He, however, later succumbed to complications of chemotherapy. This case highlights the diagnostic difficulties in LCDD, the importance of an accurate pretransplant diagnosis, and treatment of the malignant clone, in the absence of which post-transplant management of recurrence is challenging with poor outcomes.

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75: Narsaria P, Lodha R. Isn't it Time to Stop Using 0.18% Saline in Dextrose Solutions for Intravenous Maintenance Fluid Therapy in Children? *Indian Pediatr*. 2014 Dec 8;51(12):964-6. PubMed PMID: 25560153.

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This study aimed to evaluate the identification of clinical fungal isolates (yeast and molds) by protein profiling using Matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF/MS). A total of 125 clinical fungal culture isolates (yeast and filamentous fungi) were collected. The test set included 88 yeast isolates (*Candida albicans*, *Candida glabrata*, *Candida guilliermondii*, *Candida kefyr*, *Candida krusei*, *Candida parapsilosis*, *Candida rugosa*, *Candida tropicalis* and *Cryptococcus neoformans*) and 37 isolates of molds (*Alternaria* spp., *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus niger*, *Cunninghamella* spp., *Histoplasma capsulatum*, *Microsporum gypseum*, *Microsporum nanum*, *Rhizomucor* spp. and *Trichophyton* spp.). The correlation between MALDI TOF MS and conventional identification for all these 125 fungal isolates included in the study was 87.2% at the species level and 90.4% at the genus level. MALDI TOF MS results revealed that the correlation in yeast (n=88) identification was 100% both at the genus and species levels whereas, the correlation in mold (n=37) identification was more heterogeneous i.e. 10.81% isolates had correct identification up to the genus level, 56.7% isolates had correct identification both at the genus and species levels, whereas 32.42% isolates were deemed Not Reliable Identification (NRI). But, with the modification in sample preparation protocol for molds, there was a significant improvement in identification. 86.4% isolates had correct identification till the genus and species levels whereas, only 2.7% isolates had Not Reliable

Identification. In conclusion, this study demonstrates that MALDI-TOF MS could be a possible alternative to conventional techniques both for the identification and differentiation of clinical fungal isolates. However, the main limitation of this technique is that MS identification could be more precise only if the reference spectrum of the fungal species is available in the database.

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Mutations in H3.3-ATRX-DAXX chromatin remodeling pathway have been reported in pediatric GBMs. H3.3 (H3F3A) mutations may affect transcriptional regulation by altered global histone-methylation. Therefore, we analyzed yet partly understood global histone code (H3K-4/9/27/36) trimethylation pattern in H3F3A-ATRX mutants and wild-type. H3F3A, HIST1H3B, IDH1, ATRX, DAXX and Tp53 mutations were identified by sequencing/immunohistochemistry in 27 pediatric GBMs. Global histone-methylation H3K-4/9/27/36me3 and Polycomb-protein EZH2 expression were evaluated by immunohistochemistry. H3F3A-ATRX mutation was observed in 66.7 % (18/27) of pediatric GBMs. K27M and G34R-H3F3A mutations were found in 37 % (10/27) and 14.8 % (4/27) patients respectively. G34V-H3F3A, HIST1H3B and IDH1 mutations were absent. Notably, commonest global histone-methylation mark lost was H3K27me3 (17/25, 68 %) followed by H3K4me3 (45.5 %, 10/22) and H3K9me3 (18.2 %, 4/22). Global H3K36me3 showed no loss. Most significant observation was loss of one or more histone-trimethylation mark in 80 % (20/25) pediatric GBMs. Notably, simultaneous loss of H3K27me3 and H3K4me3 were present in 7/22 (31.8 %) of pediatric GBMs. Low expression of EZH2 was found in 12/24 (50 %) of cases. However no significant correlation of loss of histone-marks or EZH2 expression with H3F3A-ATRX mutants (loss of at least one histone-marks in 87.5 % (14/16) cases) versus wild-types (loss of at least one histone-marks in 75 % (6/8) cases) was seen. The present study highlights for the first time combinatorial loss of one or more histone-trimethylation marks associated with majority of pediatric GBMs and the finding suggests significant role of histone-code in the molecular biology that underlies pediatric GBMs. Hence therapies for patients with particular combinations of histone modifications present opportunity to design innovative patient-tailored treatment protocols.

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**OBJECTIVE:** To study the impact of national economic and human development status on patient profiles and outcomes in the setting of acute coronary syndrome (ACS).

**METHODS:** We conducted a retrospective analysis of the Targeted Platelet Inhibition to Clarify the Optimal Strategy to Medically Manage Acute Coronary Syndromes trial (TRILOGY ACS) population (51 countries; 9301 patients). Outcome measures compared baseline characteristics and clinical outcomes through 30 months by 2010 country-level United Nations Human Development Indices (HDIs) and per-capita gross national income.

**RESULTS:** TRILOGY ACS enrolled 3659 patients from 27 very-high HDI countries, 3744 from 18 high-HDI countries and 1898 from 6 medium-HDI countries. Baseline characteristics of groups varied significantly, with the medium-HDI group having a lower mean age (63.0 years, vs 65.0 and 68.0 years for high-HDI and very-high HDI, respectively;  $p < 0.001$ ), lower baseline Global Registry of Acute Coronary Events risk score and lower rate of non-ST-segment elevation myocardial infarction (58.0%, vs 62.2% and 83.9% among high-HDI and very-high HDI, respectively). Medium-HDI and high-HDI patients had lower unadjusted 30-month rates for the composite of cardiovascular death/myocardial infarction/stroke (17.6%, 16.9% and 23.1% for medium-HDI, high-HDI and very-high HDI, respectively); this difference disappeared after adjusting for baseline characteristics. Adjusted HRs for the composite endpoint were lower in lower-income/middle-income countries vs upper-income/middle-income (0.791 (95% CI 0.632 to 0.990)) and high-income countries (0.756 (95% CI 0.616 to 0.928)), with differences largely attributable to myocardial infarction rates.

**CONCLUSIONS:** Clinical patient profiles differed substantially by country HDI groupings. Lower unadjusted event rates in medium-HDI countries may be explained by younger age and lower comorbidity burden among these countries' patients. This heterogeneity in patient recruitment across country HDI groupings may have important implications for future global ACS trial design.

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85: Roy KK, Kansal Y, Subbaiah M, Kumar S, Sharma JB, Singh N. Hysteroscopic septal resection using unipolar resectoscope versus bipolar resectoscope: Prospective, randomized study. *J Obstet Gynaecol Res*. 2014 Dec 10. doi: 10.1111/jog.12646. [Epub ahead of print] PubMed PMID: 25491475.

AIM: To compare the operation and reproductive outcome of hysteroscopic septal resection using unipolar resectoscope verses bipolar resectoscope.

METHODS: In this prospective randomized study, 70 women underwent hysteroscopic septal resection using either unipolar resectoscope or bipolar resectoscope. Intraoperative parameters (operation time, fluid deficit and complications) and pre- and postoperative serum sodium levels were compared between the two groups. A second-look hysteroscopy was performed after 6 weeks. All pregnancies occurring during the follow-up period were recorded.

RESULTS: There was no statistically significant difference between the two groups in terms of operation parameters and second-look hysteroscopy findings. Six patients in the unipolar group were found to have hyponatremia in the postoperative period compared to none in the bipolar group ( $P=0.025$ ). Regarding reproductive outcome, the difference between the two groups was not significant.

CONCLUSION: The use of bipolar resectoscope is associated with lesser risk of hyponatremia compared to unipolar resectoscope. Bipolar resectoscopy is a safe alternative to unipolar resectoscopy with similar reproductive outcome.

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Vascular malformations and hemangiomas are common in children, but gastric hemangioma is extremely rare with less than 15 reported cases in the pediatric age group. Gastric hemangioma accounts for only 0.05% of all gastrointestinal neoplasms, and intra-abdominal hemangiomas are rarely found outside of the liver. We present a unique case of gastric hemangioma, and multiple hemangiomas were detected in a single scan by Tc-labeled RBC blood pool imaging. This case also depicts the incremental role of SPECT/CT over planar acquisition for detecting multiple hemangiomas, especially for those lesions located adjacent to physiological blood pool activity.

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89: Salve H, Rizwan S, Kant S, Rai SK, Kharya P, Kumar S. Pre-treatment practices among patients attending an Animal Bite Management clinic at a primary health centre in Haryana, North India. Trop Doct. 2014 Dec 23. pii: 0049475514562492. [Epub ahead of print] PubMed PMID: 25540164.

A cross-sectional study was carried out at the Animal Bite Management (ABM) clinic in a primary health centre in the Faridabad district of Haryana. Information about socio-demographic characteristics, animal bite exposure and pre-treatment practices was obtained. Clinical examination determined the severity of the bite. All 619 patients who reported to the ABM clinic during January 2011 to December 2012 were included. Out of the total, 38% had applied

chilli-oil paste, and 4% antiseptics to the wound as pre-treatment; only 30.6% had washed the wound with water. There was a direct association between traditional pre-treatment practices and delay in seeking treatment for animal bites which was statistically significant ( $P=0.01$ ). Health education of the general population with culturally appropriate Information, Education and Communication material is therefore a necessary strategy to reduce delay in seeking appropriate treatment.

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90: Sampath Kumar V, Marimuthu K, Subramani S, Sharma V, Bera J, Kotwal P. Prospective randomized trial comparing open reduction and internal fixation with minimally invasive reduction and percutaneous fixation in managing displaced intra-articular calcaneal fractures. *Int Orthop*. 2014 Dec;38(12):2505-12. doi: 10.1007/s00264-014-2501-0. Epub 2014 Aug 20. PubMed PMID: 25139716.

**PURPOSE:** Managing displaced intra-articular calcaneal fractures remains controversial. A prospective randomised trial was undertaken to compare open reduction and internal fixation (ORIF) with minimally invasive reduction and percutaneous fixation (MIRPF).

**METHODS:** Forty-five displaced intra-articular calcaneal fractures were randomised to undergo either ORIF ( $n=23$ ) or MIRPF ( $n=22$ ). Patients were followed up clinically and radiologically for a minimum of one year postoperatively. The primary outcome measure was wound-healing complication. Functional outcome was assessed using Creighton Nebraska Health Foundation (CNF) scale, and radiological outcome was assessed using plain radiographs and computed tomography (CT) scans.

**RESULTS:** Of the 23 heels in the ORIF group, seven (30%) had wound-healing problems, compared with none in the MIRPF group ( $p=0.005$ ). There was no statistically significant difference in radiological outcomes between groups, as measured by Böhler's angle, Gissane's angle and Score Analysis of Verona (SAVE). Median time to return to work was two weeks earlier ( $p=0.004$ ), and the functional outcome score (CNF scale) at one year of follow-up was better ( $p=0.013$ ) following MIRPF compared with ORIF.

**CONCLUSION:** MIRPF is associated with fewer wound-healing problems, better functional outcome and earlier return to work compared with ORIF.

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Genetic polymorphisms in the methylene tetrahydrofolate reductase (MTHFR) gene have been associated with the development of acute leukemias and various malignancies. The role of MTHFR polymorphism in the development of pediatric acute lymphoblastic leukemia (ALL) has been extensively studied among north Indians in various settings, yet its association with acute leukemias remains unresolved. To evaluate the relationship between functional MTHFR polymorphisms, C677T and A1298C and possible effect on risk of ALL in adults and children in North Indian population by comparing them with healthy controls. DNA was isolated from peripheral blood of 184 ALL patients (33 adults, 151 children) and 155 controls and analyzed by a PCR-restriction fragment length polymorphism assay. The frequency of MTHFR 677CT and 1298 AC genotypes were significantly lower among



adult ALL cases when compared to the controls. We found a 1.74-fold reduced risk of ALL in individuals with 1298AC polymorphic variant and a 9.17-fold decreased risk of adult ALL. However, no statistically significant difference was evident between the above polymorphisms and susceptibility to ALL in children. Polymorphisms in the MTHFR gene possibly modulate risk of ALL in north Indian adults but not in children, although larger studies are needed.

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Retinoblastoma is the most common malignant intraocular tumor of childhood. Drug resistance and relapses are major problems with chemotherapy, which is regarded as the mainstay of globe preserving treatment in retinoblastoma. P-glycoprotein (P-gp) expression has been reported to be associated with chemoresistance and poor prognosis in various malignancies. We analyzed P-gp expression in retinoblastoma specimens, enucleated either primarily or after neoadjuvant chemotherapy by immunohistochemistry and immunoblotting, and correlated with the histopathological findings. Variables were statistically analyzed by Fischer's exact and chi-square tests. Tumor tissues were collected from enucleated eyes of 24 children. Fifteen of these were primarily enucleated (group I), and nine (group II) had received chemotherapy prior to enucleation. P-gp was expressed in 4/15 (26.7 %) eyes in group I and in 5/9 (55.6 %) eyes in group II. P-gp was highly expressed in group II as compared to group I. There was no correlation between P-gp expression and tumor differentiation, invasion, or laterality. In conclusion, there was markedly high expression of P-gp in eyes with retinoblastoma enucleated after chemotherapy. This may possibly play a role in chemoresistance or it may be that chemotherapy might have induced high expression. These findings may have important implications for the treatment of retinoblastoma patients but need further prospective investigations in a larger patient population.

93: Sethuraman G, Sreenivas V, Yenamandra VK, Gupta N, Sharma VK, Marwaha RK, Bhari N, Irshad M, Kabra M, Thulkar S. Threshold levels of 25-hydroxyvitamin D and parathyroid hormone for impaired bone health in children with congenital ichthyosis and type IV and V skin. *Br J Dermatol.* 2015 Jan;172(1):208-214. doi: 10.1111/bjd.13131. Epub 2014 Dec 30. PubMed PMID: 24864027.

**BACKGROUND:** Patients with congenital ichthyosis, especially those with darker skin types, are at increased risk of developing vitamin D deficiency and rickets. The relationships between 25-hydroxyvitamin D [25(OH)D], parathyroid hormone (PTH) and bone health have not been studied previously, in ichthyosis.

**OBJECTIVES:** To determine the threshold levels of 25(OH)D and PTH for impaired bone health in children with congenital ichthyosis.

**METHODS:** In this cross-sectional study, 119 children with ichthyosis and 168 controls were recruited. Serum 25(OH)D, PTH, calcium, phosphate and alkaline phosphatase (ALP) were measured. Radiological screening for rickets was carried out only in children with ichthyosis.

**RESULTS:** Forty-seven children with ichthyosis had either clinical or radiological evidence of rickets. The correlation between serum 25(OH)D and PTH showed that a serum level of 25(OH)D 8 ng mL<sup>-1</sup> was associated with a significant increase in PTH. The correlation between PTH and ALP showed that a serum PTH level of 75 pg mL<sup>-1</sup> was associated with a significant increase in ALP levels. Of the different clinical phenotypes of ichthyosis, both autosomal recessive congenital ichthyosis (ARCI) and epidermolytic ichthyosis (EI) were found to have significantly increased PTH, ALP and radiological rickets scores compared with common ichthyosis.

**CONCLUSIONS:** Serum levels of 25(OH)D ≤ 8 ng mL<sup>-1</sup> and PTH ≥ 75 pg mL<sup>-1</sup>

significantly increases the risk for development of rickets [odds ratio (OR) 2.8; 95% confidence interval (CI) 1.05-7.40;  $P = 0.04$ ] in ichthyosis. Among the different types, patients with ARCI (OR 4.83; 95% CI 1.74-13.45;  $P < 0.01$ ) and EI (OR 5.71; 95% CI 1.74-18.79;  $P < 0.01$ ) are at an increased risk of developing rickets.

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94: Sharawat SK, Vishnubhatla S, Bakhshi R, Raina V, Kumar L, Sharma A, Bakhshi S. Relative receptor tyrosine kinases and anti-apoptotic transcripts hold potential for predicting inferior outcome in adult acute myeloid leukemia: a prospective pilot study. *Clin Lymphoma Myeloma Leuk.* 2014 Dec;14(6):501-508.e2. doi: 10.1016/j.clml.2014.04.005. Epub 2014 Jun 11. PubMed PMID: 25065779.

**INTRODUCTION:** Acute myeloid leukemia is characterized by accumulation of immature cells because of imbalance between proliferation and apoptosis. In AML, simultaneous expression of proliferative (FLT-3, c-KIT) and antiapoptotic genes (BCL-2), are unknown.

**PATIENTS AND METHODS:** We prospectively assessed proliferative and antiapoptotic gene transcripts using Taqman probe chemistry in 48 adult AML patients. A stepwise Cox regression model was applied for independent prognostic factors.

**RESULTS:** Thirty-two of 48 (75%) patients achieved complete remission. At follow-up ranging from 0.5 to 57.3 months, event-free survival (EFS) was  $26.9 \pm 6.3\%$  (range, 15.5%-39.6%) and OS  $34.5 \pm 7.46\%$  (range, 20.5%-48.9%). High white blood cell count correlated with an inferior complete remission rate ( $P = .021$ ). Cytogenetics and FLT-3 internal tandem duplication did not predict EFS or OS. The transcripts of FLT-3, c-KIT, and BCL-2 showed a significant linear association with each other in Pearson correlation (FLT-3 vs. c-KIT:  $R = 0.8234$ ;  $P < .001$ ; c-KIT vs. BCL-2:  $R = 0.3377$ ;  $P = .01$ ; FLT-3 vs. BCL-2:  $R = 0.3815$ ;  $P = .007$ ). In a validation cohort (Microarray Data Set GSE1159) of adult AML patients, the global gene expression profile depicted a similar interrelationship. Patients with a greater platelet count were associated with increased transcript levels of BCL-2 ( $P = .034$ ). In univariate analysis, a high transcript level of FLT-3 and high transcript ratio of FLT-3/BCL-2 and FLT-3 and c-KIT/BCL-2 significantly predicted OS ( $P = .043$ ,  $.028$ , and  $.028$ , respectively). In a stepwise Cox regression model, high FLT-3 and c-KIT/BCL-2 ratio predicted OS (HR, 2.29).

**CONCLUSION:** To our knowledge, this is the first study that evaluated proliferative and antiapoptotic transcripts simultaneously, and results have shown that it is the relative levels of these transcripts that determine outcome in AML patients rather than their expression in isolation.

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95: Sharma J, Garg PK, Jain D, Bakshi S, Pandey D. Primary Hodgkin's Disease of the Common Bile Duct: a Case Report and Review of Literature. *J Gastrointest Cancer.* 2014 Dec;45 Suppl 1:218-21. doi: 10.1007/s12029-014-9636-5. PubMed PMID: 24994121.

96: Sharma P, Karunanithi S, Chakraborty PS, Kumar R, Seth A, Julka PK, Bal C, Kumar R. 18F-Fluoride PET/CT for detection of bone metastasis in patients with renal cell carcinoma: a pilot study. *Nucl Med Commun.* 2014 Dec;35(12):1247-53. doi: 10.1097/MNM.000000000000195. PubMed PMID: 25171438.

**PURPOSE:** The aim of this study was to evaluate the role of F-fluoride PET/computed tomography (CT) in the detection of bone metastasis in patients with renal cell carcinoma (RCC) and compare the results with fluorine-18 fluorodeoxyglucose (F-FDG) PET/CT and technetium-99m methylene diphosphonate bone

scintigraphy (BS) when available.

**MATERIALS AND METHODS:** The data of 36 patients (mean age: 52.5±14.1 years; male/female: 27/9) with RCC who prospectively underwent F-fluoride PET/CT were analyzed. PET/CT images were analyzed by two nuclear medicine physicians in consensus, visually and semiquantitatively [maximum standardized uptake value (SUVmax)]. Results of F-fluoride PET/CT were compared with those of F-FDG PET/CT (n=16) and BS (n=22). Histopathology or clinical or imaging follow-up (minimum 6 months) were used as the reference standard.

**RESULTS:** Overall, F-fluoride PET/CT showed a sensitivity of 100%, specificity of 94.4%, positive predictive value of 94.7%, negative predictive value of 100%, and accuracy of 97.2%. It demonstrated a total of 134 skeletal lesions, of which 101 were characterized as metastasis and 33 as benign. Corresponding CT changes were seen for 129/134 lesions. The mean SUVmax of the lesions was 30.3±48.4.

F-Fluoride PET/CT and F-FDG PET/CT showed similar accuracy for visualization of bone metastasis (93.7 vs. 100%; P=0.993). However, F-FDG PET/CT additionally demonstrated extraskeletal metastasis in 6/16 patients. No significant difference was seen between the accuracies of BS and F-fluoride PET/CT for visualization of bone metastasis (93.7 vs. 100%; P=0.115), but the former showed significantly more skeletal lesions (91 vs. 44; P<0.0001). In 4/22 patients (18%) with negative BS, F-fluoride PET/CT demonstrated skeletal metastasis.

**CONCLUSION:** F-Fluoride PET/CT shows high diagnostic accuracy for the detection of bone metastasis in patients with RCC. It shows comparable results to F-FDG PET/CT and detects more skeletal lesions compared to BS.

97: Sharma P, Naswa N, Kc SS, Alvarado LA, Dwivedi AK, Yadav Y, Kumar R, Ammini AC, Bal C. Comparison of the prognostic values of 68Ga-DOTANOC PET/CT and 18F-FDG PET/CT in patients with well-differentiated neuroendocrine tumor. *Eur J Nucl Med Mol Imaging*. 2014 Dec;41(12):2194-202. doi: 10.1007/s00259-014-2850-3. Epub 2014 Jul 17. PubMed PMID: 25030618.

**PURPOSE:** To determine the prognostic value of (68)Ga-DOTANOC PET/CT in patients with well-differentiated neuroendocrine tumor (NET), and to compare the prognostic value with that of (18)F-FDG PET/CT and other conventional clinicopathological prognostic factors.

**METHODS:** Data from 37 consecutive patients (age 46.6±13.5 years, 51% men) with well-differentiated NET who underwent (68)Ga-DOTANOC PET/CT and (18)F-FDG PET/CT were analyzed. All patients underwent a baseline visit with laboratory and radiological examinations. Clinical and imaging follow-up was performed in all patients. Progression-free survival (PFS) was measured from the date of the first PET/CT scan to the first documentation of progression of disease.

**RESULTS:** (68)Ga-DOTANOC PET/CT was positive in 37 of the 37 patients and (18)F-FDG PET/CT was positive in 21. During follow-up 10 patients (27%) showed progression of disease and 27 (73%) showed no progression (24 stable disease, 3 partial response). The median follow-up was 25 months (range 2 - 52 months). Among the variables evaluated none was significantly different between the progressive disease and nonprogressive disease groups, with only SUVmax on (68)Ga-DOTANOC PET/CT being borderline significant (P = 0.073). In the univariate analysis for PFS outcome, SUVmax on (68)Ga-DOTANOC PET/CT (HR 0.122, 95% CI 0.019 - 0.779; P = 0.026) and histopathological tumor grade (HR 4.238, 95% CI 1.058 - 16.976; P = 0.041) were found to be associated with PFS. Other factors including age, sex, primary site, Ki-67 index, TNM stage, (18)F-FDG PET/CT status (positive/negative), SUVmax on (18)F-FDG PET/CT and type of treatment were not significant. In multivariable analysis, only SUVmax on (68)Ga-DOTANOC PET/CT was found to be an independent positive predictor of PFS (HR 0.122, 95% CI 0.019 - 0.779; P = 0.026).

**CONCLUSION:** SUVmax measured on (68)Ga-DOTANOC PET/CT is an independent, positive prognostic factor in patients with well-differentiated NET and is superior to SUVmax on (18)F-FDG PET/CT and conventional clinicopathological factors for

predicting PFS.

98: Sharma RK, Purohit A, Somasundaram V, Mishra PC, Kotru M, Ranjan R, Kumar S, Sazawal S, Pati HP, Tyagi S, Saxena R. Aberrant myeloid antigen co-expression is correlated with high percentages of CD34-positive cells among blasts of acute lymphoblastic leukemia patients: an Indian tertiary care center perspective. *Blood Res.* 2014 Dec;49(4):241-5. doi: 10.5045/br.2014.49.4.241. Epub 2014 Dec 23. PubMed PMID: 25548757.

**BACKGROUND:** Aberrant myeloid antigen (MA) co-expression and high expression of CD34 antigen on the blasts of acute lymphoblastic leukemia (ALL) patients are independently reported to have a role in pathogenesis and prognosis. This study was conducted to determine whether these two parameters are related.

**METHODS:** A total of 204 cases of ALL were included in an analysis of blast immunophenotypic data. CD34 expression was categorized as low when less than 50% of blasts were CD34-positive (CD34(low)) and as high when 50% or more were CD34-positive (CD34(high)).

**RESULTS:** Of 204 cases of ALL, 163 and 41 were of B-cell origin (B-ALL) and T-cell origin (T-ALL), respectively. Of all cases, 132 (64.7%) showed co-expression of MA and among these, 101 (76.51%) were CD34(high), while the remaining 31 (23.48%) were CD34(low). Of 72 cases without MA co-expression, 25 (34.72%) were CD34(high) and 47 (67.25%) were CD34(low). Furthermore, of 163 cases of B-ALL, 111 showed co-expression of MA and 84 of these were CD34(high). Of 52 cases of B-ALL without MA expression, 22 were CD34(high). Among 41 cases of T-ALL, 21 co-expressed MA, 17 of which were CD34(high). Moreover, all 20 cases of T-ALL without co-expression of MA were CD34(low). These differences were statistically significant.

**CONCLUSION:** We observed a strong correlation between aberrant MA expression and CD34(high) expression on the blasts of ALL. We hypothesize that these different patient subsets may represent unique prognostic characteristics.

99: Sharma S, Gupta R, Thakur SC. Attenuation of Collagen Induced Arthritis by *Centella asiatica* Methanol Fraction via Modulation of Cytokines and Oxidative Stress. *Biomed Environ Sci.* 2014 Dec;27(12):926-38. doi: 10.3967/bes2014.133. PubMed PMID: 25484009.

**OBJECTIVE:** To investigate the anti-inflammatory, antioxidant and anti-arthritic effects of *Centella asiatica* methanol fraction (CaME) on collagen-induced arthritis (CIA), an animal model of rheumatoid arthritis.

**METHODS:** Arthritis was induced in female wistar rats by immunization with porcine type II collagen. The CIA rats were treated orally with CaME (50, 150, and 250 mg/kg/day) for 15 d (beginning on day 21 of the experimental period). The clinical, histological, biochemical, and immunological parameters were assessed.

**RESULTS:** CaME treatment (150 and 250 mg/kg) significantly attenuated the severity of CIA and reduced the synovial inflammation, cartilage erosion, and bone erosion as evident from both histological and radiographic data. The escalated plasma levels of pro-inflammatory cytokines TNF- $\alpha$ , IL-1 $\beta$ , IL-6, and IL-12 along with nitric oxide in CIA rats decreased significantly on CaME treatment. The serum levels of type-II collagen antibody were significantly lower in rats of CaME (150 and 250 mg/kg) treated group than those in the arthritic group. Furthermore, by inhibiting the above mediators, CaME also contributed towards the reversal of the disturbed antioxidant levels and peroxidative damage.

**CONCLUSION:** Our results clearly indicate that oral administration of CaME suppresses joint inflammation, cytokine expression as well as antioxidant imbalance, thereby contributing to an amelioration of arthritis severity in CIA rats.

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100: Shivashankar R, Kirk K, Kim WC, Rouse C, Tandon N, Venkat Narayan KM, Ali MK. Quality of diabetes care in low- and middle-income Asian and Middle Eastern countries (1993-2012) - 20-Year systematic review. *Diabetes Res Clin Pract*. 2014 Dec 3. pii: S0168-8227(14)00522-1. doi: 10.1016/j.diabres.2014.11.004. [Epub ahead of print] Review. PubMed PMID: 25529849.

**OBJECTIVE:** To assess the extent to which people with diabetes in low- and middle-income countries (LMIC) of Asia and the Middle East met evidence-based care recommendations through a systematic review of published literature.

**METHODS:** Electronic searches of Medline and Embase were carried out for studies assessing quality of care among people with diabetes in Asia and the Middle East between 1993 and 2012. Benchmarking against American Diabetes Association guidelines, we reported level and proportions meeting recommended risk factor control (glycated hemoglobin [HbA1c], blood pressure, and low density lipoprotein-cholesterol [LDL]) and preventive care processes across different settings.

**RESULTS:** One hundred and fifteen publications met eligibility for inclusion (91 reported risk factor control, 7 reported preventive processes, and 17 reported both). Only China, Thailand, Malaysia and Philippines had nationally representative data. Mean HbA1c (6.5-11% or 48-97mmol/mol), SBP (120-152mm Hg), and LDL (2.4-3.8mmol/l) varied greatly. Despite variation in availability of data, studies consistently showed that recommended care goals were not being achieved.

**CONCLUSIONS:** The practice of auditing and benchmarking against evidence-based guidelines appears to be uncommon in Asia and the Middle East and there was heterogeneity of reporting across studies, populations, and methods used. The available data showed inadequate care.

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101: Shukla D, Bablani D, Chowdhry A, Thapar R, Gupta P, Mishra S. Dentofacial and cranial changes in down syndrome. *Osong Public Health Res Perspect*. 2014 Dec;5(6):339-44. doi: 10.1016/j.phrp.2014.09.004. Epub 2014 Nov 12. PubMed PMID: 25562042.

**OBJECTIVES:** This study aimed to determine the prevalence of certain oral characteristics usually associated with Down syndrome and to determine the oral health status of these patients.

**METHODS:** The cross-sectional study was conducted among patients attending a special education program at Faculty of Dentistry, Jamia Millia Islamia, Delhi, India. The study design consisted of closed-ended questions on demographic characteristics (age, sex, and education and income of parents), dietary habits, and oral hygiene habits. Clinical examination included assessment of oral hygiene according to Simplified Oral Hygiene Index (OHI-S), dental caries according to decayed, missing, and filled teeth (DMFT) index, periodontal status according to

the Community Periodontal Index of Treatment Needs (CPITN), and malocclusion according to Angles classification of malocclusion. Examinations were carried out using a using a CPI probe and a mouth mirror in accordance with World Health Organization criteria and methods. Craniometric measurements, including maximum head length and head breadth were measured for each participant using Martin spreading calipers centered on standard anthropological methods.

**RESULTS:** The majority of the patients were males (n = 63; 82%) with age ranging from 6-40 years. The Intelligence Quotient (IQ) score of the patients indicated that 31% had moderate mental disability and 52% had mild mental disability. 22% exhibited hearing and speech problems. 12% had missing teeth and 15% had retained deciduous teeth in adult population. The overall prevalence of dental caries in the study population was 78%. DMFT, CPITN and OHI scores of the study group were  $3.8 \pm 2.52$ ,  $2.10 \pm 1.14$  and  $1.92 \pm 0.63$  respectively. The vast majority of patients required treatment (90%), primarily of scaling, root planing, and oral hygiene education. 16% of patients reported CPITN scores of 4 (deep pockets) requiring complex periodontal care. The prevalence of malocclusion was 97% predominantly of Class III malocclusions. Further 14% presented with fractured anterior teeth primarily central incisor. The percentage means of cephalic index was 84.6% in the study population. The brachycephalic and hyperbrachycephalic type of head shape was dominant in the Down syndrome individuals (90%).

**CONCLUSION:** The most common dentofacial anomaly seen in these individuals was fissured tongue followed by macroglossia.

102: Shukla PK, Gautam L, Sinha M, Kaur P, Sharma S, Singh TP. Structures and binding studies of the complexes of phospholipase A2 with five inhibitors. *Biochim Biophys Acta*. 2014 Dec 23. pii: S1570-9639(14)00333-1. doi: 10.1016/j.bbapap.2014.12.017. [Epub ahead of print] PubMed PMID: 25541253.

Phospholipase A2 (PLA2) catalyzes the hydrolysis of phospholipids into arachidonic acid and lysophospholipids. Arachidonic acid is used as a substrate in the next step of the multistep pathway leading to the production of eicosanoids. The eicosanoids, in extremely low concentrations, are required in a number of physiological processes. However, the increase in their concentrations above the essential physiological requirements leads to various inflammatory conditions. In order to prevent the unwanted rise in the concentrations of eicosanoids, the actions of PLA2 and other enzymes of the pathway need to be blocked. We report here the structures of five complexes of group IIA PLA2 from *Daboia russelli pulchella* with tightly binding inhibitors, (i) p-coumaric acid, (ii) resveratrol, (iii) spermidine, (iv) corticosterone and (v) gramine derivative. The binding studies using fluorescence spectroscopy and surface plasmon resonance techniques for the interactions of PLA2 with the above five compounds showed high binding affinities with values of dissociation constants (KD) ranging from  $3.7 \times 10^{-8}$  M to  $2.1 \times 10^{-9}$  M. The structure determinations of the complexes of PLA2 with the above five compounds showed that all the compounds bound to PLA2 in the substrate binding cleft. The protein residues that contributed to the interactions with these compounds included Leu2, Leu3, Phe5, Gly6, Ile9, Ala18, Ile19, Trp22, Ser23, Cys29, Gly30, Cys45, His48, Asp49 and Phe106. The positions of side chains of several residues including Leu2, Leu3, Ile19, Trp31, Lys69, Ser70 and Arg72 got significantly shifted while the positions of active site residues, His48, Asp49, Tyr52 and Asp99 were unperturbed.

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103: Singh L, Madan R, Mathur SR, Ray R. Lymphangiosarcoma of mons pubis following radiotherapy for carcinoma cervix. *J Obstet Gynaecol India*. 2014

Dec;64(Suppl 1):109-11. doi: 10.1007/s13224-013-0395-1. Epub 2013 Apr 4. PubMed PMID: 25404831; PubMed Central PMCID: PMC4228018.

104: Singh N, Das P, Gupta S, Sachdev V, Srivasatava S, Datta Gupta S, Pandey RM, Sahni P, Chauhan SS, Saraya A. Plasma cathepsin L: A prognostic marker for pancreatic cancer. *World J Gastroenterol*. 2014 Dec 14;20(46):17532-40. doi: 10.3748/wjg.v20.i46.17532. PubMed PMID: 25516668; PubMed Central PMCID: PMC4265615.

**AIM:** To assess the prognostic significance of cathepsin L, a cysteine protease that degrades the peri-tumoral tissue, in patients with pancreatic cancer.

**METHODS:** Plasma samples from 127 pancreatic cancer patients were analyzed for cathepsin L levels by ELISA. Out of these patients, 25 underwent surgery and their paraffin-embedded tissue was analyzed for cathepsin L expression by immunohistochemistry. Survival of patients and clinicopathological parameters was correlated with cathepsin L expression in plasma and tissue using appropriate statistical analysis.

**RESULTS:** The mean ( $\pm$  SD) cathepsin L in plasma samples of pancreatic cancer patients was  $5.98 \pm 2.5$  ng/mL that was significantly higher compared to the levels in healthy controls ( $3.83 \pm 0.45$ ) or chronic pancreatitis patients ( $3.97 \pm 1.06$ ). Using ROC curve, a cut-off level of 5.0 ng/mL was decided for survival analysis. Elevated plasma levels of cathepsin L were found to be associated with poor prognosis ( $P = 0.01$ ) in multivariate analysis. The plasma levels of the protease decreased after surgery. Though no significant correlation was seen between plasma and tissue expression of this protease, a trend did emerge that high cathepsin L expression in tissue correlated with its high levels in plasma.

**CONCLUSION:** Cathepsin L levels in plasma of pancreatic cancer patients may be used as a potential prognostic marker for the disease.

105: Singh S. Changing trends in the epidemiology, clinical presentation, and diagnosis of Leishmania-HIV co-infection in India. *Int J Infect Dis*. 2014 Dec;29C:103-112. doi: 10.1016/j.ijid.2014.07.011. Epub 2014 Oct 22. Review. PubMed PMID: 25449244.

Following the HIV epidemic, several countries have reported co-infections of Leishmania with HIV. Co-infection with these two pathogens results in rapid disease progression, more severe disease, and a poor response to treatment. A systematic review of the literature from India is presented herein. Since the first case of visceral leishmaniasis (VL) and HIV was published from India in 1999, a number of cases of HIV-Leishmania co-infection have been reported, but the proportion has been low (0.029-0.4%), as also reported in other countries where these two diseases are co-endemic. More than 89 cases of VL-HIV and 10 cases of cutaneous leishmaniasis (CL)-HIV have been published since 1999. Of these latter 10 cases, five had simple CL and five cases manifested with diffuse cutaneous leishmaniasis (DCL). In addition, one case of post-kala-azar mucocutaneous leishmaniasis in a patient with full-blown AIDS has also been reported. In two cases, it could not be ascertained whether they were cases of DCL or post-kala-azar dermal leishmaniasis from the description. Although the first case of VL-HIV co-infection was reported from the sub-Himalayan state of Uttarakhand, most cases have been reported from the VL endemic state of Bihar. HIV-Leishmania is not alarmingly high in India. Most cases were found to have occurred during 1997-2007. After that, the number of new cases decreased. This is most probably due to the low prevalence of HIV in VL and CL endemic regions and

to the free supply of highly active antiretroviral therapy for HIV-infected patients.

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106: Singh S, Shukla G, Goyal V, Srivastava AK, Singh MB, Vibha D, Behari M. Impact of sleep on the localizing value of video EEG in patients with refractory focal seizures - A prospective video-EEG with EOG and submental EMG study. Clin Neurophysiol. 2014 Dec;125(12):2337-43. doi: 10.1016/j.clinph.2014.03.021. Epub 2014 Apr 4. PubMed PMID: 24856459.

**OBJECTIVES:** To examine the role of sleep and its stages on the localizing value of video EEG in the evaluation of refractory focal seizures.

**METHODS:** Video-electroencephalographic (VEEG) evaluation with additional polygraphic recording was carried out for 70 consecutive patients with refractory focal epilepsy, undergoing pre-surgical evaluation, over a two-year period. Localization of video EEG for each seizure was made based on clinical, ictal and interictal data. Seizure localization in each patient was assessed for concordance with MRI and other imaging data (SPECT, PET) for both wake and sleep seizures. Interictal discharges in sleep and wake were similarly compared for concordance with imaging data.

**RESULTS:** A total of 608 seizures were recorded in 70 patients, 289 in sleep. Overall, concordance with imaging data was found in 218 out of 322 wake seizures (67.8%) and in 157 out of 286 sleep seizures (54.8%) ( $p=0.0314$ ). On analyzing the subset of patients with seizures recorded in both wake and sleep states (total 279 seizures recorded, 113 out of sleep), concordance was observed in 93 out of 166 (56%) wake seizures and in 80 out of 113 (70.7%) sleep seizures (OR 2.03, 95% CI 1.17 to 3.56;  $p 0.007$ ). Interictal discharges were more common and more precisely localizing in sleep, mostly in stage N2.

**CONCLUSIONS:** This prospective VEEG-PSG study demonstrates the role of sleep versus wake state in the localizing value of different components of long-term VEEG recording for patients with medically refractory epilepsy. Our findings show that while wake state ictal EEG has more localizing value in a mixed group of patients, sleep ictal and interictal EEG is significantly more useful in patients who have seizures recorded both during wake and sleep states. In addition, interictal discharges recorded during NREM sleep have high localizing value.

**SIGNIFICANCE:** This is only the second study elucidating the effect of sleep on the localizing value of video-electroencephalographic evaluation of patients with medically refractory focal epilepsy; mainly revealing high value of sleep interictal discharges and that sleep ictal recording has two times higher localizing value than wake ictal recording, among patients in whom seizures are recorded in both states.

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107: Sinha G, Gupta S, Temkar S, Pandey V, Sihota R, Dada T. IOP agreement between I-Care TA01 rebound tonometer and the Goldmann applanation tonometer in eyes with and without glaucoma. Int Ophthalmol. 2014 Dec 16. [Epub ahead of print] PubMed PMID: 25510295.

To analyze correlation of intraocular pressure (IOP) measurement between new rebound tonometer (RBT) I-Care TA01 and Goldmann applanation tonometer (GAT). One hundred eighty-five eyes of 185 subjects presenting with glaucoma or cataract



were enrolled in the study. In all patients, IOP was obtained by an ophthalmologist using I-Care TA01 and GAT. IOP between the two were compared at range of 8-15, 16-21, and >22 mmHg and difference was considered as significant at  $p < 0.05$  (t test). Bland-Altman analysis tested agreement between instruments overall and for each subgroup of patients with glaucoma or no glaucoma (cataract only). Of 185 patients, 86 had glaucoma; 99 did not. Mean age of patients was  $55.77 \pm 14.46$  years; with no difference between the two subgroups ( $p = 0.12$ ). There was no significant difference in mean IOP between the two tonometers at IOP between 8-15 mmHg ( $p = 0.097$ ) and 16-21 mmHg ( $p = 0.51$ ). However, a significant difference was observed between the two at IOP > 22 mmHg ( $p = 0.023$ ) with mean GAT (24.8 mmHg) being higher than mean RBT (23.16 mmHg). Overall, there was no difference between the two ( $p = 0.59$ ) and they had a high correlation (Pearson correlation  $r = 0.815$ ;  $p = 0.01$ ). The mean difference between the two was 0.1 (95 % agreement limits: UL +6 (1.96SD), LL -5.8 (-1.96SD)), in patients with no glaucoma was 0.091 (95 % AL: UL +4.8 (1.96SD), LL -4.6 (-1.96SD)), and in patients with glaucoma was 0.151 (95 % AL: UL +7.25 (1.96SD), LL -6.9 (-1.96SD)). RBT I-Care TA01 and Goldmann tonometer cannot be used interchangeably due to large limits of agreement.

108: Sultania M, Pandey D, Sharma J, Mallick S, Mridha AR. Delayed isolated port-site metastasis of gallbladder cancer following laparoscopic cholecystectomy: report of two cases. *J Gastrointest Cancer*. 2014 Dec;45 Suppl 1:188-91. doi: 10.1007/s12029-014-9622-y. PubMed PMID: 24870252.

109: Suri A, Tripathi M, Deo RC. Anterolateral transcavernous extradural petrosectomy approach: 3-dimensional operative video demonstration in cadavers. *Neurosurgery*. 2014 Dec;10 Suppl 4:656; discussion 656. doi: 10.1227/NEU.0000000000000500. PubMed PMID: 25050585.

110: Takkar B, Chandra P, Kumar K, Vanathi M. Toxic granulomatous anterior uveitis in live intracameral cysticercosis masquerading as leukocoria. *Can J Ophthalmol*. 2014 Dec;49(6):e140-1. doi: 10.1016/j.jcjo.2014.08.011. PubMed PMID: 25433748.

111: Takkar B, Mehdi MU, Ahmed NR, Chandra P, Vanathi M. Anterior segment optical coherence tomography of live ocular cysticercosis. *Clin Experiment Ophthalmol*. 2014 Dec;42(9):896-8. doi: 10.1111/ceo.12339. Epub 2014 May 8. PubMed PMID: 24674082.

112: Talwar S, Keshri VK, Choudhary SK, Gupta SK, Ramakrishnan S, Saxena A, Kothari SS, Juneja R, Kumar G, Airan B. Unidirectional valved patch closure of ventricular septal defects with severe pulmonary arterial hypertension: hemodynamic outcomes. *J Thorac Cardiovasc Surg*. 2014 Dec;148(6):2570-5. doi: 10.1016/j.jtcvs.2013.10.052. Epub 2013 Dec 9. PubMed PMID: 24332111.

**OBJECTIVE:** The purpose of the present study was to study the midterm hemodynamic outcomes of unidirectional valved patch closure of ventricular septal defects (VSDs) in patients with VSD and pulmonary arterial hypertension (PAH).

**METHODS:** From January 2006 to January 2012, 20 patients with VSD with PAH and a pulmonary vascular resistance index >8 Wood units underwent VSD closure with a unidirectional valved patch using the technique previously described by us. Of these, 13 patients agreed to follow-up cardiac catheterization and were studied at a mean follow-up of  $34.7 \pm 18.6$  months (range, 2-56). The mean age of these 13

patients was  $8.5 \pm 4.4$  years (range, 2-19; median, 9), and the mean preoperative systemic saturation was  $94.1\% \pm 3.4\%$  (range, 87-99; median, 95.0) The mean preoperative pulmonary artery systolic pressure was  $96.2 \pm 13.6$  mm Hg (range, 75-115; median, 103.0), and the mean preoperative pulmonary vascular resistance index was  $10.0 \pm 2.1$  Wood units (range, 8.0-15.1; median, 9.3).

**RESULTS:** At follow-up cardiac catheterization, the mean systemic saturation had increased to 98.92%. The pulmonary vascular resistance index had decreased significantly to  $5.8 \pm 2.1$  Wood units ( $P = .02$ ). A significant decrease was seen in the pulmonary artery systolic, diastolic, and mean pressures ( $P = .000$ ), and none of the patients had severe PAH. No patients died, and all patients were in New York Heart Association class I.

**CONCLUSIONS:** Unidirectional valved patch closure of VSD is a promising technique for patients with a large VSD and severe PAH. It had a favorable effect on the immediate, early, and midterm clinical outcomes and hemodynamic parameters.

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113: Temkar S, Gupta S, Sihota R, Sharma R, Angmo D, Pujari A, Dada T. Illuminated Microcatheter Circumferential Trabeculotomy Versus Combined Trabeculotomy-Trabeculectomy for Primary Congenital Glaucoma: A Randomized Controlled Trial. *Am J Ophthalmol*. 2014 Dec 6. pii: S0002-9394(14)00776-4. doi: 10.1016/j.ajo.2014.12.001. [Epub ahead of print] PubMed PMID: 25486542.

**PURPOSE:** To compare outcomes of illuminated microcatheter-assisted circumferential trabeculotomy vs combined mitomycin C-augmented trabeculotomy-trabeculectomy for primary congenital glaucoma.

**DESIGN:** Prospective, randomized trial.

**METHODS:** Of the 30 patients (60 eyes) analyzed with bilateral primary congenital glaucoma aged  $\leq 2$  years, 1 eye of each patient was randomized to: illuminated microcatheter-assisted trabeculotomy (Group I) or combined trabeculotomy with trabeculectomy augmented with mitomycin C (Group II). Primary outcome measure was intraocular pressure (IOP) reduction. Categorization into absolute success (IOP  $\leq 15$  mm Hg without medication) and qualified success (IOP  $\leq 15$  mm Hg with medication) was done. Secondary outcomes included change in corneal diameter and clarity, optic disc status, refraction, need for anti-glaucoma therapy, and occurrence of complications.

**RESULTS:** Mean age of patients was  $6.63 \pm 5.74$  months. IOP fell by 49.3% ( $22.25 \pm 10.88$  to  $11.56 \pm 3.33$  mm Hg) in Group I and 46.6% in Group II ( $21.73 \pm 8.89$  to  $11.60 \pm 3.03$  mm Hg) ( $P < .001$  in both). At 1 year, absolute success was achieved in 86.7% (26/30) and 90.0% (27/30) in Groups I and II, respectively ( $P > .99$ ) and qualified success in 93.3% (28/30) in both groups ( $P = 1$ ). There was significant improvement in corneal clarity ( $P < .001$ ) and cup-to-disc ratio ( $P \leq .01$ ) in both groups at 1 year. Though incidence of hyphema was significantly more in Group I ( $P = .0001$ ), no vision-threatening complications occurred in either group.

**CONCLUSIONS:** Illuminated microcatheter-assisted circumferential trabeculotomy achieved comparable surgical outcomes to mitomycin C-augmented combined trabeculotomy-trabeculectomy and may be recommended as the initial surgical procedure for primary congenital glaucoma.

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114: Upadhyay A, Verma KK, Lal P, Chawla D, Sreenivas V. Heparin for prolonging peripheral intravenous catheter use in neonates: a randomized controlled trial. *J Perinatol*. 2014 Dec 4. doi: 10.1038/jp.2014.203. [Epub ahead of print] PubMed PMID: 25474552.

**Objective:**To determine the efficacy of heparinized saline administered as intermittent flush on functional duration of the peripheral intravenous catheter (PIVC) in neonates.**Study Design:**Randomized, double-blind and placebo-controlled trial. **Setting:** Neonatal intensive care unit of a teaching hospital. **Participants:** Term and preterm neonates born at >32 weeks of gestation who required PIVC only for intermittent administration of antibiotics. **Intervention:** Eligible neonates were randomized to receive 1ml of either heparinized saline (10Uml(-1)) (n=60) or normal saline (n=60) every 12h before and after intravenous antibiotics. **Main outcome measure:** Functional duration of first peripheral intravenous catheter.**Result:**A total of 120 neonates were randomized to two groups of 60 neonates each. The mean (s.d.) of age of babies in case and control group was 5.7 (2.5) days and 4.6 (3.1) days, respectively. The average weight of babies in both the groups was 2.1kg. Mean functional duration of first catheter was more in heparinized saline group, mean (s.d.) of 71.68h (27.3) as compared with 57.7h (23.6) in normal saline group (P<0.005). The mean (95% confidence interval) difference in functional duration in the two groups was 13.9h (4.7-23.15). Mean duration of patency for any catheter was also significantly more in heparinized saline group than control group.**Conclusion:**Heparinized saline flush increases the functional duration of peripheral intravenous catheter.*Journal of Perinatology* advance online publication, 4 December 2014; doi:10.1038/jp.2014.203.

115: Varshney M, Gupta R. Psychotropics and risk of violent crime. *Lancet*. 2014 Dec 6;384(9959):2025. doi: 10.1016/S0140-6736(14)62333-3. PubMed PMID: 25483166.

116: Velpandian T, Kotnala A, Halder N, Ravi AK, Archunan V, Sihota R. Stability of Latanoprost in Generic Formulations Using Controlled Degradation and Patient Usage Simulation Studies. *Curr Eye Res*. 2014 Dec 11:1-11. [Epub ahead of print] PubMed PMID: 25494824.

**Abstract Purpose:** To evaluate the stability of latanoprost in generic formulations by using controlled degradation and patient usage simulation studies **Methods:** Standard latanoprost was subjected to controlled degradation studies. Latanoprost content was assessed by using MRM, and generated Degradation Products (DP) were analysed by using the Information Dependent Acquisition (IDA) protocol of positive ESI-LC-MS/MS. Latanoprost content and formation of DP were assessed in generic formulations and were compared with Xalatan® in a controlled patient usage simulation studies. The last few drops of latanoprost, present in containers used by patients were also evaluated. **Results:** Extreme pH conditions, oxidation, light and heat were found to be the significant factors for high degree of latanoprost degradation. Systematic analysis of 7 selected generics revealed that the latanoprost content varied from 90-330%. Concentration of the latanoprost in Xalatan was found to be 97% of the label claim. Degradation studies showed the formation of 3 novel and 3 already known impurities. Upon simulated patient usage, 2 of the generic formulations showed significant degradation of latanoprost. Generic formulations having thermally sealed gas tight packing showed good stability during patient usage. Overage of latanoprost was observed in generics with other than thermal sealing. Latanoprost bottles used by patients showed concentrations ranging from 20 to 250% of label claim (144% median). **Conclusion:** This study revealed the presence of overage of

latanoprost in some generic formulations and formation of degradation products. Packaging with gas tight containers may be one of the important factors for latanoprost stability, along with its storage at low temperature during patient usage.

117: Verma A, Bajpai M, Baidya DK. Lumbotomy approach for upper urinary tract surgeries in adolescents: Feasibility and challenges. *J Pediatr Urol*. 2014 Dec;10(6):1122-5. doi: 10.1016/j.jpuro.2014.05.001. Epub 2014 Jun 2. PubMed PMID: 24947345.

**OBJECTIVE:** The objective of this study was to assess the feasibility and challenges in a lumbotomy approach for performing upper urinary tract surgeries in adolescent children.

**MATERIAL AND METHODS:** Fifty-five adolescent children underwent various upper urinary tract surgeries from 2000 to 2012. In all patients, the kidneys and ureters were approached via a lumbotomy incision. The patients' characteristics were analysed from the hospital charts. Intraoperative and postoperative details were gathered from individual case files. Data were collected regarding: age, weight, gender, diagnosis, surgical procedure, anaesthetic details, any intraoperative problems encountered, postoperative pain, time to oral feed, length of hospitalisation and any complications.

**RESULTS:** The median age at surgery was 14 years (range 10-19). There were 42 boys and 13 girls. Median weight was 41 kg (range 28-52 kg). Surgeries performed were pyeloplasty, pyelolithotomy, nephroureterectomy and heminephrectomy. Mean duration of surgery was 80 min (range 60-130 min) with no special anaesthetic requirements. No intraoperative problems were encountered. In all patients, postoperative stay was uneventful with minimal analgesic requirements and oral feeding was started the very next day. There were no incision-related complications.

**CONCLUSIONS:** A lumbotomy incision is technically easy and safe, even in adolescent children, as an approach for upper urinary-tract surgeries.

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118: Wadhwani M, Bali SJ, Satyapal R, Angmo D, Sharma R, Pandey V, Dada T. Test-Retest Variability of Retinal Nerve Fiber Layer Thickness and Macular Ganglion Cell-Inner Plexiform Layer Thickness Measurements Using Spectral-Domain Optical Coherence Tomography. *J Glaucoma*. 2014 Dec 16. [Epub ahead of print] PubMed PMID: 25517254.

**PURPOSE::** To evaluate the test-retest variability of spectral-domain optical coherence tomography (OCT) in measurement of retinal nerve fiber layer (RNFL) thickness and macular ganglion cell-inner plexiform layer (GCIPL) thickness.

**METHODS::** A total of 65 eyes of healthy subjects were enrolled in this observational cross-sectional study. RNFL thickness and GCIPL thickness were measured using the repeat scan optic cube and macular cube protocol using Cirrus HD-OCT (software version 6.0). A single operator obtained 3 measurements during 1 session to determine test-retest variability. Intrasession repeatability was defined by intraclass correlation, limits of agreement, and coefficient of variation.

**RESULTS::** The mean age of patients was 37.89±15.11 years (range, 10 to 70 y). The mean RNFL thickness readings as measured during 3 sessions were 93.89±9.73,

93.63±10.00, and 93.55±9.64 µm and average GCIPL thickness measurements were 82.90±4.61, 82.98±4.24, and 83.06±4.36 µm, respectively. Coefficient of variation was 1.2 for average RNFL thickness and 0.82 for average GCIPL thickness. The intraclass correlation coefficient showed a good correlation between repeat measurements for both average RNFL and GCC thicknesses (0.994 and 0.990, respectively). The limits of agreement (95% confidence interval) for the 3 sessions ranged from -3.61 to 4.13 µm for the average RNFL thickness and -2.55 to 2.40 µm for GCIPL thickness measurements.

CONCLUSIONS:: In healthy eyes, Cirrus HD-OCT shows excellent intrasession repeatability for RNFL and GCIPL thickness measurements.

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