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Editorial

On Appreciating Human Physiology

For most physicians, human physiology is a subject that one gets done with in the first year of medical school and thereafter it remains of peripheral interest. After all, our professional careers consist of constantly looking for the abnormal, rather than appreciating how beautifully and harmoniously our bodies function when they are not beset with medical disorders. The bulk of our time is consumed in diagnosing and treating illnesses.

Years and years of dealing with and of course profiting from human morbidity and mortality desensitises us to the marvel that is the human body and how well it works until something goes awry. Case in point, the human brain. With all that modern technology has to provide in terms of powerful imaging tools, we have made great strides in understanding neurological and neuropsychiatric disorders. However, when we try to understand the physiology and biochemistry of the brain, we realise how little we know of its complex neural networks and sadly how little we care to know unless it is a topic of specific research interest to us.

For medical professionals to effectively deal with the abnormal it important to have a true understanding and an appreciation of what constitutes the normal. The study of human physiology provides us that unique perspective. An elegant concept such as homeostasis or Claude Bernard's, 'Milieu intérieur' makes one marvel at the intricate manner in which the human body functions continuously and all the intrinsic corrective measures it takes when it senses something is not right. These could be in the form of stimulating hormones or other such intricate feedback mechanisms. Our treatments work best when we strive to harness these inbuilt mechanisms and avoid disrupting them with pharmacological or surgical intervention.

Reiterating human physiology while explaining medical disorders to our patients, helps in their obtaining greater insight into their conditions, appreciating their own bodies and taking more effective preventive measures. Instead of just focussing on what is not right, it helps them to take solace in all that is wonderful in themselves and to participate more positively in their treatment.

As for me, appreciating the amazing wonders of the human mind is an effective counter balance to the sadness and pain that I encounter in my practice. It also helps set a standard for what one aspires to do not just for one's patients but also to retain one's own sanity and humanity.

Rajesh M. Parikh, M.D., D.P.M., D.N.B.

Director, Medical Research

Research News

Dr. Srisanat Rao presented an oral paper entitled “Comparative study of age and effect of medical co-morbidities on short term clinical outcome following spine surgery in the elderly” at the 31st ASSICON (Association of Spine Surgeons of India) National Conference held at Chennai in January 2018.

Abstracts

Nuclear Cardiology Practices and Radiation Exposure in the Oceania Region: Results From the IAEA Nuclear Cardiology Protocols Study (INCAPS)

Biswas S, Better N, Pascual TN, Mercuri M, Vitola JV, Karthikeyan G, Westcott J, Alexanderson E, Allam AH, Al-Mallah MH, Bom HH, Bouyoucef SE, Flotats A, Jerome S, Kaufman PA, Lele V, Luxenburg O, Mahmarian JJ, Shaw LJ, Underwood SR, Rehani M, Kashyap R, Dondi M, Paez D, Einstein AJ

Heart Lung and Circulation 2017;26:25-34.

BACKGROUND: There is concern about radiation exposure with radionuclide myocardial perfusion imaging (MPI). This sub-study of the International Atomic Energy Agency (IAEA) Nuclear Cardiology Protocols Study reports radiation doses from MPI, and use of dose-optimisation protocols in Australia and New Zealand (ANZ), and compares them with data from the rest of the world.

METHODS: Data were collected from 7911 MPI studies performed in 308 laboratories worldwide in one week in 2013, including 439 MPI studies from 34 ANZ laboratories. For each laboratory, effective radiation dose (ED) and a quality index (QI) score (out of 8) based on pre-specified "best practices" was determined.

RESULTS: In ANZ patients, ED ranged from 0.9-17.9 milliSievert (mSv). Median ED was similar in ANZ compared with the rest of the world (10.0 (IQR: 6.5-11.7) vs. 10.0 (IQR 6.4-12.6, P=0.15), as were mean QI scores (5.5±0.7 vs. 5.4±1.3, P=0.84). Use of stress-only imaging (17.6% vs. 31.8% of labs, P=0.09) and weight-based dosing of technetium-99m (14.7% vs. 30.3%, P=0.07) was lower in ANZ compared with the rest of the world but this difference was not statistically significant. Median ED was significantly lower in metropolitan versus non-metropolitan laboratories (10.1 mSv vs. 11.6 mSv, P<0.01), although mean QI scores were similar (5.4±0.8 vs. 5.5±0.7, P=0.75).

CONCLUSION: Across ANZ, there is variability in ED from MPI, and use of radiation safety practices, particularly between metropolitan and non-metropolitan laboratories. Overall, ANZ laboratories have a similar median ED to laboratories in the rest of the world.

Consensus recommendations on exploring effective solutions for the rising cost of diabetes

Sadikot SM, Das AK, Wilding J, Siyan A, Zargar AH, Saboo B, Aravind SR, Sosale B, Kalra S, Vijayakumar G, Manojan KK, Maheshwari A, Panda JK, Banerjee S, Chawla R, Vasudevan SP, Sundar OSS, Kesavadev J

Diabetes Metabolic Syndrome 2017;11:141-7.

Diabetes remains asymptomatic for a long period of time and its real burden gets noticed only once the complications set in. The number of individuals affected with the disease is also on the rise and more so in the low income countries. This scenario calls for urgent precautionary measures that need to be undertaken to equip ourselves to fight against this chronic disease. Individuals with financial constraints cannot afford to access even the basic treatment facilities and thus stands the most burdened. The International Diabetes Federation calls for 'Eyes on Diabetes' for the society to focus on early screening and early intervention. The rising cost of diabetes results from delayed and denied treatment. The panel discussion organized as a part of 4th Annual global diabetes convention of Jothydev's Professional Education Forum (JPEF, 2016) facilitated a platform to address diabetes as a serious health concern that needs to be given immediate priority by the policymakers as well as public and also to discuss about the feasible measures that will help achieve cost effective and affordable diabetes treatment. This was followed by in-depth literature search and finally a set of recommendations have been arrived at by the key opinion leaders to realize the dream of affordable diabetes care to all deserving individuals.

Advanced therapeutic options and importance of rebiopsy in epidermal growth factor receptor-tyrosine kinase inhibitor-progressed nonsmall cell lung carcinoma patients: An expert opinion

Advani SH, Malhotra H, Chacko RT, Basade M, Keechilat P, Mahapatra PN, Goswami C, Sahoo TP, Shah C.

Indian Journal of Cancer 2017;54:S31-S36.

Advanced nonsmall cell lung cancer (NSCLC) treatment is primarily based on platinum-based chemotherapy. Although epidermal growth factor receptor (EGFR) targeting has shifted the treatment paradigm toward personalized tyrosine kinase inhibitors (TKIs), resistance develops inevitably and EGFR T790M is the most common acquired resistance mechanism. Rebiopsy of resistant NSCLC cases can provide additional information on the underlying resistant mechanisms and therefore can help clinicians in taking better management decisions. An expert panel meeting of renowned cancer oncologists was held to discuss the management of advanced-stage NSCLC. The present paper is based on the recommendations made by the expert panel and is supported by an exhaustive literature search. It was suggested that identification of driver mutation leads to better treatment decisions. TKIs have proven to be better treatment option in EGFR-positive patients as compared to chemotherapy. Third-generation TKIs (osimertinib) promise to bring optimal and improved care for NSCLC cases failing first-line TKI treatment.

Current trends of liposuction in India: Survey and Analysis

Methil B

Indian Journal of Plastic Surgery 2015;48:249-62.

BACKGROUND: Liposuction is the commonest aesthetic procedure performed by Indian plastic surgeons. However, there exists substantial disparity amongst Indian surgeons about guidelines concerning liposuction. To address this disparity, a nationwide email survey (Association of Plastic Surgeons of India [APSI] database) was started in December 2013 and continued for 5 months.

MATERIAL AND METHODS: The survey was developed with software from www.fluidsurveys.com. The study was designed to cover most aspects of patient selection, perioperative management, technical considerations, postoperative management and complications. This is the first survey to be conducted in India for an extremely popular procedure. It is also one of the most exhaustive surveys that have been conducted in terms of the topics covered.

RESULTS AND CONCLUSIONS: One hundred and eighteen surgeons (including a majority of the cosmetic surgery stalwarts in the country) completed the survey. As expected, the results show a disparity in most parameters but also consolidation on some issues. Liposuction is considered extremely safe (86.1%). The majority of surgeons (70.3%) aspirated >5 L at one time. The majority (80.2%) felt that the limits for liposuction should be relative and not absolute. The survey highlights lack of standardization with respect to infiltration solutions. The commonest complications observed were contour irregularities, followed by seroma and inadequate skin redrape. The amount of aspirate is the only factor, which achieves statistical significance with respect to major complications. A review of the current evidence and recommendations has been incorporated, along with an in depth analysis of the survey.

PDX1 Gene Mutation with Permanent Neonatal Diabetes Mellitus with Annular Pancreas, Duodenal Atresia, Hypoplastic Gall Bladder and Exocrine Pancreatic Insufficiency

Kulkarni A, Sharma VK, Nabi F

Indian Pediatrics 2017;54:1052-3.

BACKGROUND: Neonatal diabetes mellitus is a rare condition.

CASE CHARACTERISTICS: A small for gestational age male, presented with neonatal onset diabetes mellitus, duodenal atresia, annular pancreas and gall bladder hypoplasia.

OBSERVATION: A novel homozygous mutation p.K163R (c.488A>G) in the PDX1 gene was found. Parents were heterozygous for the same.

MESSAGE: This case highlights the importance of establishing the genetic diagnosis in all cases of neonatal diabetes mellitus

Long-term clinical outcome of Budd–Chiari syndrome in children after radiological intervention

Sharma, Varun K.; Ranade, Prajakta R.; Marar, Shaji; Nabi Fazal; Nagral, Aabha.

European Journal of Gastroenterology & Hepatology 2016; 28: 567–75.

OBJECTIVES: Budd–Chiari syndrome (BCS) is an uncommon cause of chronic liver disease in children. The literature on the management of pediatric BCS is scarce. Our aim was to determine the long-term outcome of patients undergoing a radiological intervention for the treatment of BCS.

METHODS: Thirty-two children diagnosed with BCS between 2004 and 2014 were included. Data on the course of disease, medical management, response, and complications related to radiological interventions and outcome were collected.

MAIN RESULTS: Twenty-five patients who were on regular follow-up were analyzed. The median age of the patients at presentation was 9 months (4.5–214). Sixteen patients initially received anticoagulation alone. This was associated with a high failure rate of 66%. Twenty patients underwent a radiological intervention in the form of angioplasty ($n=7$), hepatic vein stenting ($n=3$) or transjugular intrahepatic portosystemic shunt (TIPS) ($n=14$). Success with angioplasty was achieved in 43% of cases. Hepatic vein stenting was successful in 66%, whereas TIPS was successful in 72% of cases. TIPS was feasible in all patients. The median follow-up duration was 44 months (5–132). Four patients developed hepatopulmonary syndrome after a median period of 3 years (1.5–5.25) and one patient developed hepatocellular carcinoma.

CONCLUSION: BCS commonly presents during infancy. Anticoagulation alone and angioplasty of the hepatic veins are associated with a high failure rate. Hepatic vein stenting or TIPS is feasible and efficacious in improving liver function, portal hypertension, and growth. It is associated with good long-term outcome and delays the need for liver transplantation, but may not prevent complications such as hepatopulmonary syndrome and hepatocellular carcinoma.

Multicentric high grade oligodendroglioma: a rare entity

Vats A, Amit A, Doshi P

British Journal of Neurosurgery 2017;30:1-3

A 74 year old male presented with 1 month history of weakness in right upper limb and motor aphasia for 15 days. Magnetic resonance imaging (MRI) of the brain showed three discrete ring enhancing lesions. An image guided awake craniotomy and biopsy of a lesion was performed. The histopathological examination revealed it to be a grade III Oligodendroglioma. This was a rare case of multicentric high grade oligodendroglioma has never been reported in literature. We report such a case with relevant review of literature.

Comparison of transferrin isoform analysis by capillary electrophoresis and HPLC for screening congenital disorders of glycosylation

Dave MB, Dherai AJ, Udani VP, Hegde AU, Desai NA, Ashavaid TF

Journal of Clinical Laboratory Analysis 2017; 32:1-8.

BACKGROUND: Transferrin, a major glycoprotein has different isoforms depending on the number of sialic acid residues present on its oligosaccharide chain. Genetic variants of transferrin as well as the primary (CDG) & secondary glycosylation defects lead to an altered transferrin pattern. Isoform analysis methods are based on charge/mass variations. We aimed to compare the performance of commercially available capillary electrophoresis CDT kit for diagnosing congenital disorders of glycosylation with our in-house optimized HPLC method for transferrin isoform analysis.

METHODS: The isoform pattern of 30 healthy controls & 50 CDG-suspected patients was determined by CE using a Carbohydrate-Deficient Transferrin kit. The results were compared with in-house HPLC-based assay for transferrin isoforms.

RESULTS: Transferrin isoform pattern for healthy individuals showed a predominant tetrasialo transferrin fraction followed by pentasialo, trisialo, and disialotransferrin. Two of 50 CDG-suspected patients showed the presence of asialylated isoforms. The results were comparable with isoform pattern obtained by HPLC. The commercial controls showed a <20% CV for each isoform. Bland Altman plot showed the difference plot to be within +1.96 with no systemic bias in the test results by HPLC & CE.

CONCLUSION: The CE method is rapid, reproducible and comparable with HPLC and can be used for screening Glycosylation defects.

Successful treatment of extensive splanchnic vein thrombosis in a patient with mycosis fungoides

Nagral NS, Dhakre VW, Parikh N, Marar S

BMJ Case Rep. 2018 Feb 5;2018. pii: bcr-2017-222710. doi: 10.1136/bcr-2017-222710.

A 33-year-old man of a Middle Eastern origin presented to us with abdominal pain and distension secondary to refractory ascites of 1-month duration. The patient had a history of taking oral retinoic acid 25 mg for 4 months for mycosis fungoides. Investigations revealed thrombosis of hepatic veins with extensive thrombosis of the porto-mesenteric axis. A combination of transjugular intrahepatic portosystemic shunt, balloon angioplasty and thrombolysis with recombinant tissue plasminogen activator was successfully used to treat his condition.

Editorial Board

Drs. Tarang Gianchandani, Rajesh Parikh, Fazal Nabi, Nihar Mehta, Prochi Madon & Pravin Agrawal.

Editorial Assistant: Ms. Maherra Khambaty.