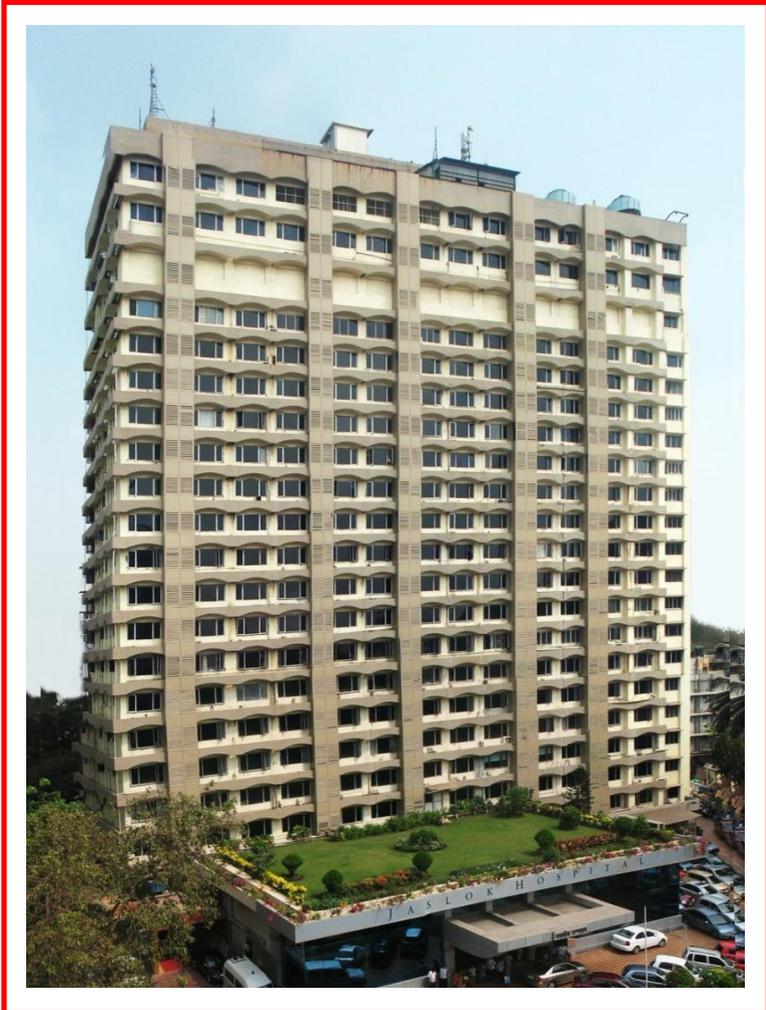




Jaslok Hospital & Research Centre, Mumbai

Research eBulletin

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From the CEO's Desk

“Research is creating new knowledge.” It comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge for the betterment of the world. Research is important for clinicians as it links clinical experience and the evidence base to the laboratory. It lends data to statistical and trend analysis, collaboration, discovery and ultimately to positive impacts on patient care and safety. Research findings enhance the expertise and clinical skills of clinicians and provide a rich environment for teaching and developing young doctors and other medical professionals. The Jaslok management would like to encourage research across all health care professionals. Improvement in patient quality care is achieved when the entire human resource of the organization focuses on aspects of patient care and safety.

This e-bulletin is an effort from JHRC to make our research accessible within the hospital as well as to external stake holders. With this endeavour, I would like to encourage every member of the Jaslok family to contribute towards research to make us care for our patients in a more holistic manner. I wish the Apex Committee for Research, the Scientific Advisory Committee and the Ethics Committee the very best and thank them for their efforts. I would also like to thank the board of trustees and especially our trustee, Mr. V.P. Chanrai, Chairman of the Apex Committee for Research, who has envisioned the bright future of research at Jaslok and is a constant source of motivation for all of us.

Dr. Tarang Gianchandani

Editorial

Juggling Personal, Professional and Social Responsibilities with Research

Balancing one’s professional, personal and social responsibilities isn’t easy but it can be done and with adequate effort can become... well effortless! Recently I have started learning to juggle and after the initial clumsiness and chasing a lot of dropped objects, I can now with some effort juggle three balls. Am beginning to enjoy it and hope to entertain my family and friends soon with a performance.

Juggling is perhaps a good metaphor for what many professionals wind up doing daily in their lives. If we are focused and determined to excel at it, it can be fun, pleasurable to perform and inspiring to observe. If we are constantly distracted, it can be stressful. That is a choice those of us who wish to pursue research need to make. We can make it easier on our families, our friends, patients and ourselves if we strive to maintain good health and to stay happy. Good health and happiness can be looked upon as the stable foundations for us to master the skill sets required to juggle our personal, professional and social responsibilities with high quality research.

Rajesh M. Parikh, M.D. D.P.M. Dip.N.B.E.
Director, Medical Research

Research News

Pediatric intensivist, Dr. Varun Sharma won the third prize in the hepatology category for his presentation, 'Long term clinical outcome of Budd Chiari syndrome in children after radiological intervention,' at the 14th Commonwealth Association of Paediatric Gastroenterology and Nutrition (CAPGAN) conference in New Delhi in October 2015.

Abstracts

Evaluation of the benefits of sequential addition of leflunomide in patients with polyarticular course juvenile idiopathic arthritis failing standard dose methotrexate

Chickermane PR, Khubchandani RP

Clin Exp Rheumatol. 2015; 33(2):287-92.

Objectives

To evaluate the benefits of the addition of leflunomide (LEF) in children with polyarticular course juvenile idiopathic arthritis (JIA), non-responsive to standard dose parenteral methotrexate (MTX).

Methods

In an observational study, 32 children with polyarticular course JIA failing standard dose MTX (up to 15 mg/m²/week sc for at least 3 and up to 6 months) received additional LEF. Permitted concomitant drugs included pulse steroids for flares and/or low bridging dose of prednisolone, intra-articular steroids and non-steroidal anti-inflammatory drugs. No other DMARDs had been used before enrolment. Patients underwent 8-12 weekly assessment. At each visit, core set of outcome variables and laboratory parameters, viz. haemogram and liver enzymes were recorded. The primary efficacy outcome was the ACR Pedi 30 criteria. At the last follow up, Wallace's criteria were used to determine children achieving remission.

Results

25 of 32 children who followed up for at least 3 months were analysed. Mean follow up duration following addition of LEF was 1.61 years (range: 0.29 to 3.0 years). At 3 months, 68% of the patients met the ACR Pedi 30 response. 17 of the 20 children (85%) showed an ACR Pedi 30 response at 6 months and 16 out of 18 (88.8%) at 1 year. Of the 18 children followed up till the end of the study, 12 (66.6%) met the ACR Pedi 30 criteria and 9 (50%) were in clinical remission on medications (off steroids). Adverse effects were observed in 2 children (gastritis in one and elevated liver enzymes in the other).

Conclusions

Our findings support further study of the role of this combination in the management of polyarticular course JIA refractory to standard dose MTX, especially in resource challenged settings where biologicals are unaffordable. The open observational nature of the study is its limitation.

Variation of the latissimus dorsi

Ishani P Shah, Amit Yadav, Rujuta Mehta, Mukund Thatte

Indian Journal of Plastic Surgery 2014;47:453-455.

A typical muscle variation of latissimus dorsi - the axillary arch is represented by the muscular or fibromuscular slip detached from the anteroinferior border of the musculus latissimus dorsi passing over the axilla under the axillary fascia crossing the medial side of the brachial plexus to continue as a septum intermusculare mediale brachii distally to the medial epicondyle of humerus. The full extent of the muscle is rarely present. Slips of muscle extend from the latissimus dorsi at the inferior angle of scapula to insert into pectoralis major (Langer), coracobrachialis, biceps or coracoid process forming what is described as a common variant - the muscular axillary arch. We report three cases of variants of latissimus dorsi, one of which has not been reported in the literature before.

HCC surveillance results in earlier HCC detection: results from an Indian cohort

Anita Kohli, Allison A Murphy, Chirdeep Agarwal, Bhavana Shivakumar, Shyam Kottlil, Michael A Polis, G Mani Subramanian, Vandana Midha, Omesh Goyal, Srinivas Desai, Ajit Sood and Samir Shah

Springerplus 2014; 3: 610. Doi:10.1186/2193-1801-3-610, PMCID: PMC4209002

Hepatocellular carcinoma (HCC) is the third most common cause of cancer-related death worldwide, with an increased incidence in South Asia. In order to describe the effect of surveillance for HCC with biannual ultrasound and alpha-fetoprotein (AFP) on diagnosis and survival in an Indian population a retrospective cohort-control study was performed at two liver clinics in India. The medical records of 3,258 patients with cirrhosis who received surveillance for HCC were reviewed, and 100 patients who developed HCC identified. Sixty-four cirrhotic patients diagnosed with HCC during the same time period without a history of surveillance were included and survival, BCLC stage at diagnosis, and treatment were compared.

Patients who underwent surveillance were more likely to be diagnosed with potentially curable or treatable BCLC Stage 0/A disease and Stage B/C disease respectively, than late Stage D disease ($\chi^2 = 0.0007$). Patients diagnosed at an earlier stage of HCC lived significantly longer after diagnosis than patients diagnosed at a later stage (Stage 0/A: 15.6 ± 14.2 months vs. Stage B/C: 9.43 ± 19.7 months vs. Stage D: 5.59 ± 11.9 months; $p = 0.0006$). While treatment for HCC improved overall survival, only 28% of eligible patients received treatment, explaining the lack of survival benefit noted in the surveillance group. Surveillance for HCC led to detection of HCC at earlier stages. The impact of surveillance on improved mortality could not be evaluated given the limited number of patients who received treatment. HCC surveillance has the potential to improve survival in South Asian patients with cirrhosis only if improvements in access to appropriate treatment are made.

Medistinal zygomycosis (mucormycosis): an unusual manifestation of invasive zygomycosis (mucormycosis), presenting as a mediastinal mass in an immunocompetent adult male

Vyas PK, Ghatawat G, Mathur RS, Shivdasani B

Journal of Pulmonary and Respiratory Medicine 2014; 4(4):192.

The common causes of mediastinal mass are neoplasms including Hodgkin's disease, neuroblastoma and non-Hodgkin's lymphoma. About one third of the cases are benign such as teratomas, neurofibromas and lipomas. Histological findings are essential to distinguish between benign and malignant conditions. Zygomycosis is a rare fungal infection usually presenting as a subcutaneous infection. Visceral involvement is reported usually with pulmonary and gastrointestinal tract involvement. Here, the authors report a case of zygomycosis in an immunocompetent adult male who presented with mediastinal mass.

Air embolism: a rare complication of esophagogastroduodenoscopy

Ajay B. Jhaveri, Sharad C. Shah, Prasanna S. Shah

Journal of Digestive Endoscopy 2014; 5(3):114-115

Neurological complications of gastrointestinal endoscopy are extremely rare; cerebral air embolism has been described and can be severe and fatal. A high index of suspicion for an air embolism is a must in case of procedural or periprocedural cardiopulmonary instability and neurologic symptoms, particularly in patients with recognized risk factors. The diagnosis of an air embolism is often difficult and is complicated by the fact that air may be rapidly absorbed from the circulation. Simple maneuvers to decrease the impact of a potential air embolism include: stopping the procedure, administering high flow 100% oxygen, placing the patient in Trendelenburg and left lateral decubitus position, and discontinuing nitrous oxide. CT scan and 2 D ECHO are important diagnostic tests.

Fludeoxyglucose positron emission tomography-computed tomography in limbic encephalitis

Patil S and Lele V

Indian J Nucl Med. 2014;29:282-3.

A 66-year-old male patient presented with low grade fever without chills associated with simple partial seizures. He was advised whole body positron emission tomography-computed tomography (PET/CT) (fluorodeoxyglucose PET/CT) scan which demonstrated an increase in metabolic activity in the limbic system. There was no evidence of active disease anywhere else in the body. Thus, in the setting of limbic encephalitis PET-CT helps in locating the cancerous origin as well as gives information about functional abnormality of the brain.

Development and molecular characterization of human placental mesenchymal stem cells from human aborted fetal tissue as a model to study mechanism of spontaneous abortion

Pravin D. Potdar and Sachin R. Chaugule

Advances in Stem Cells, Vol. 2014 (2014), Article ID 685337, DOI: 10.5171/2014.685337

Mesenchymal stem cells (MSCs) have become an important component in stem cell therapies and can be isolated from various adult tissues. The human placenta is a fetomaternal organ having a high population of multipotent stem cells with better plasticity and differentia potential. It is interesting to see the molecular phenotypes of these stem cells in placenta obtained from aborted fetus to understand the mechanism of spontaneous abortion. In the present study, we have proposed to isolate multipotent stem cells from human aborted placental tissue and characterized them by using molecular and morphological analysis. Our study has shown that the placenta derived mesenchymal stem cells (hPMSCs) have elongated epithelioid like morphology and showed high pluripotency potential by expressing Oct4, Nanog and Sox2 along with expression of mesenchymal, hematopoietic, cytokine and chemokine markers.

We have further shown that hPMSCs cells have the capacity for spontaneous differentiation into cardiomyocytes and osteocytes which have confirmed the expression of specific cardiac and osteogenic markers. Interestingly, this study has clearly shown that there is an abnormal expression of CD 73, CD 100, CD 45, Ki67 and Vimentin in aborted fetal tissue thus indicates some role of these genes in the maintenance of pregnancies. Thus, this study concludes that hPMSCs cells can be used as an 'in vitro' model system for the evaluation of the mechanism of spontaneous abortion. Similarly, due to their multipotent characteristic they can be used for future regenerative therapies for various disorders.

Pituitary apoplexy presenting as myocardial infarction

Vishal Gupta, Sudarshan Patil, Dhiren Raval, and Pratik Gopani

Indian J Endocrinol Metab. 2014; 18:232-3.

We describe a male patient who presented with sudden onset severe headache and right sided ptosis that was diagnosed to be secondary to pituitary apoplexy on the background of diabetes mellitus. This was complicated by left ventricular failure and acute coronary syndrome. The case highlights the importance of considering hypocortisolism/hypopituitarism as an important and rare precipitant of an acute coronary event as occurred in the case.

Nobel Prize in Medicine & Physiology 2015

Winning the battle against malaria and parasitic diseases

Parasitic diseases have plagued man for centuries. Diseases like Malaria and Roundworm infestations have been a major hurdle to health globally, especially so in India. After decades of limited breakthroughs in the treatment of parasitic infestations, **William C. Campbell and Satoshi Ōmura** changed the equation. Ōmura, a Japanese microbiologist, isolated 50 promising cultures from thousands of strains of *Streptomyces* from soil samples. Campbell, an expert in parasite biology in the USA, showed that a component of one of those was active against parasites. The active agent was purified and named Avermectin, which was subsequently modified to Ivermectin. Ivermectin is used to treat Onchocerciasis (River Blindness), Strongyloidiasis, Ascariasis, Trichuriasis, Filariasis and Scabies, among other parasites.

In the 60's, quinine and chloroquine were used to treat malaria with declining success. **Youyou Tu** explored Chinese literature on herbal medicine in her quest for novel Malaria therapies. The plant *Artemisia annua* turned out to be a promising candidate. Tu developed the active agent, Artemisinin, which subsequently became the new class of highly potent anti-malaria agents. Campbell, Ōmura and Tu have transformed the treatment of parasitic diseases. They shared the Nobel prize in 2015 for these discoveries, the global impact of which is immeasurable.

Research Events

1.) Apex Committee for Research (ACR):

Actions taken by ACR are evaluation of past research of the hospital, guidelines for evaluating future research, creation of SOPs for various aspects of research, collating data on research dissertations of DNB students, appointment of a statistician, financial planning, incentivising research for resident doctors, the formation of a mentorship committee, workshops on research, focus on publishing research dissertations, the promotion of nursing research and this Research eBulletin. Actions initiated by ACR are the integration of electronic medical records (EMR) with research requirements.

2.) Research Workshops:

- i. "The Brain's Inner GPS: Nobel Prize for Medicine & Physiology 2014" by Ms. Maherra Khambaty and Dr. Rajesh Parikh on 27/11/2015.
- ii. "The Importance of Nursing Research" by Ms. Maherra Khambaty and Dr. Rajesh Parikh on 1/12/2015.
- iii. "Research Protocol Preparation" by Dr. Maninder Singh Setia on 4/12/2015.
- iv. "Achieving Perfect Balance: Health, Happiness, Study, Work, Research" by Dr. Rajesh Parikh on 24/12/2015.

Editorial Board:

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