

**ABSTRACTS OF PAPERS PRESENTED AT THE 231<sup>ST</sup>  
RESEARCH MEETING OF THE MEDICAL RESEARCH  
CENTRE OF BOMBAY HOSPITAL TRUST ON MONDAY 15<sup>TH</sup>  
JUNE 2015**

**(CONVENER - DR RAJKUMAR CHOUDHARY)**

1. Significance of focal colonic uptake on 18F-fluorodeoxyglucose Positron Emission Tomography (F18-FDG PET/CT)

**Saurabh Vitalkar, Ameya Puranik, Nirav Thaker**

*Background:* A definitive, early diagnosis and timely intervention for treatment of an adenomatous polyp can abbreviate progression to a colorectal cancer. 18F-fluorodeoxyglucose Positron Emission Tomography (F18-FDG PET) reveals the abnormal biochemical metabolic changes during the development of many benign as well as malignant lesions which may sometimes precede the appearance of any obvious morphological changes on colonoscopy and/or imaging with contrast enhanced computed tomography (CECT).

*Procedure:* We herewith report a case of 70 year old male who underwent a whole body PET/CT scan for complaints of fever, weight loss and unexplained diarrhoea. The scan was done with purpose of detecting the cause of PUO. A dose of 6.8 mCi 18F-FDG was administered and a whole body scan was performed along with a CECT 60 minutes post injection.

*Results:* A focus of FDG uptake with maximum standardised uptake value (SUVmax) of 16.3 was noted in the rectosigmoid colon on the PET scan. Conversely, previous colonoscopy done just 2 months ago revealed normal mucosa with no evidence of any polypoid lesion. Also, CECT revealed no gross morphological abnormality. A delayed image was obtained after another 60 minutes which revealed fixed focal defect in rectosigmoid colon with further rise in SUVmax to 19.0. However, considering abnormal FDG uptake on PET possibility of suspicious lesion was raised on CT as well. Further repeat colonoscopic evaluation revealed a solitary polyp in rectosigmoid colon. Polypectomy was done. Histopathology of the resected polyp found the lesion to be a tubulovillous adenoma with high-grade dysplasia, which is known to be a premalignant lesion.

*Conclusion:* A positive 18F-FDG PET for focal colonic uptake warrants further evaluation with a colonoscopy and biopsy if needed; to facilitate early diagnosis of premalignant polyps so as to curtail malignant transformation.

2. The Significance of 18F-FDG PET/CT in Large-Vessel Vasculitis

**Alok Dixit, Ameya Puranik, Nirav Thaker**

*Background:* Patients with clinical suspicion of large vessel vasculitis (LVV) may present with nonspecific signs and symptoms like fatigue, malaise, weight loss, anorexia,

sub febrile temperatures or night sweats, and increased C-reactive protein (CRP) levels or erythrocyte sedimentation rate (ESR). This patient population may remain without a diagnosis after routine diagnostic procedures. 18F-FDG PET/CT may offer substantial benefit in the diagnostic work-up of patients with clinical suspicion for LVV. 18F-FDG PET/CT ability to reveal increased metabolism and functional alterations precede the morphological changes.

*Procedure:* We herewith report a case of 63 year old female who came with complaint of fever since 1 and ½ month, difficulty in opening mouth (jaw claudication), neck pain, head ache (R > L), on and off, weight loss (65 to 61 kg - 1 month). Diagnostic work-up shows Dengue, Malaria, HBV, HBC, ANA- negative, ESR- raised (> 50), CRP- raised, she underwent a whole body 18F-FDG PET/CT scan. 18F-FDG PET/CT scan was done with purpose of detecting the cause of PUO.

*Results:* Diffuse linear increased metabolic activity seen along thickened wall of aortic arch, ascending and descending aorta, reaching up to renal hilar level- favouring possibility of vasculitis. CECT revealed, suspicious mild diffuse concentric thickening of descending aorta, without any luminal compromise. Patient was started on empirical AKT and prednisolone therapy; patient responded well on therapy and started gaining weight.

*Conclusion:* 18F-FDG PET/CT may offer substantial benefit in initial diagnosis of patients suspected of having vasculitis particularly in those who present with non-specific symptoms. It has potential to non-invasively diagnose the onset of the vasculitis earlier with prompt treatment and identification of areas of increased FDG uptake in which a biopsy can be avoided to obtain diagnosis. 18F-FDG PET/CT scan can be used for evaluating the extent of the disease and treatment response assessment.

### 3. First Trimester Ultrasound in an Ectopic Cervical Pregnancy Presentation

***Swapnil Patil, Somesh Lala, Rupesh Kashikar, Sunita Navani***

*Introduction:* Ectopic pregnancy is one of the most important risk factors for maternal morbidity and mortality in early pregnancy. Cervical ectopic pregnancy is the rarest localisation of ectopic pregnancy, although it constitutes a high-risk situation. Conservation of fertility has priority, while massive haemorrhage also needs to be prevented. During the last three decades, an increase of ectopic pregnancies (EPs) in developed countries. This rising incidence is attributed to an increase in defined risk factors; for example, pelvic inflammatory disease, smoking, previous pelvic surgery, previous EP, past and current use of intrauterine devices (IUDs) and infertility therapy. Whereas there is an increase in EPs in general, cervical EP (CEP) remains the rarest localisation of inadequate implantation. The incidence of cervical pregnancies is less than 1% of all ectopic gestations, and ranges between one in 2500-18,000 pregnancies. Despite its infrequency, clinicians should take this rare diagnosis into account whenever being confronted with unusual clinical findings in early pregnancy, as the risks for hysterectomy and severe lethal haemorrhage are highly increased compared with tubal EPs. Because

cervical pregnancy is so rare, it may not be on the diagnostic radar when a woman arrives in the emergency department with such common symptoms. Thus, a cervical pregnancy can easily be misdiagnosed as a threatened spontaneous abortion. Ultrasound can identify more than 80% of cervical pregnancies in time for medical or minimally invasive therapy, which can prevent hysterectomy and preserve fertility.

4. Parallel Transjugular Intrahepatic Portosystemic Shunt (TIPSS) In Patients with Unsalvagable Previous TIPSS Dysfunction Presented with Refractory Vericeal Bleed

**Pankaj Barai, Vaibhav, DN Amarapurkar, Krantikumar Rathod**

*Objective:* To Report the Safety and Efficacy of Parallel Transjugular Intrahepatic Portosystemic Shunt (TIPSS) in the Management of The Previous Tipss Dysfunction.

*Material & Methods:* Patients Referred From Jagvijan Ram Railway Hospital In View Of Refractory Vericeal Bleeding With Previous Tipss Dysfunction And Pancytopenia For Further Management.

Under general anaesthesia middle hepatic vein was catheterised and punctured using haskal transjugular liver access set. Since the previous shunt was communication between right hepatic vein and right portal vein; the needle was then advanced into left portal vein across the liver parenchyma to create a new tract. Transhepatic tract was then serially dilated with 4×40, 8×40 mm balloon angioplasty catheter. 10×90 mm niti-s stent was then placed across the liver tract. Post stentplasty was done using 10×40 mm balloon angioplasty catheter.

*Results:* The mean portosystemic pressure gradient before and after procedure was 36 mmHg and 7 mmHg respectively with reversal of flow in varices.

Clinical improvement was seen in the patients after the parallel tipss creation

*Conclusion:* TIPSS Revision with Creation of Parallel Transjugular Intrahepatic Portosystemic Shunt is a safe and effective method in managemnet of refractory variceal bleed with previous TIPSS dysfunction.

**ABSTRACTS OF PAPERS PRESENTED AT THE 232<sup>nd</sup>  
RESEARCH MEETING OF THE MEDICAL RESEARCH  
CENTRE OF BOMBAY HOSPITAL TRUST ON MONDAY 10<sup>th</sup>  
AUGUST 2015**

**(CONVENER - DR RAJKUMAR CHOUDHARY)**

1. Rare Association of IgA Nephropathy with Abdominal Tuberculosis

**Krishna S, Shrirang B, Parag T**

*Introduction:* The association of tuberculosis with IgA Nephropathy (IgAN) is an uncommon occurrence. IgAN may be a consequence of tuberculosis, possibly because of an abnormal IgA-mediated immune response against Mycobacterium Tuberculosis. In subjects with acute nephritis during tuberculosis infection, it remains difficult to formulate a differential diagnosis among primary or secondary renal involvement because of tuberculosis itself or to anti tuberculous agents. Moreover, glomerulonephritis occurring during infectious diseases always represent a difficult condition to define the appropriate pharmacological treatment, considering the high risks of immunosuppression, which need to be evaluated in each patient.

We describe series of 2 patients with abdominal tuberculosis with proteinuria and deranged kidney functions, which on kidney biopsy proves to be IgA nephropathy, and after initiation of AKT showed significant decrease in proteinuria and serum creatinine.

A 59 yr old woman was evaluated for her complaints of decreased appetite and weight loss since 4 mths. On examination she had moderate ascites which was exudative with a high ADA levels. Laparoscopy showed peritoneum studded with multiple deposits which on HPE showed caseating granulomas. Serum creatinine was 2.1 mg% with a proteinuria of 11.7 gm. Renal biopsy showed segmental mesangial sclerosis with a strong IF staining of IgA with C3. On initiation of antitubercular treatment after 2 months serum Creatinine was 0.9 mg% and proteinuria reduced to 1.2 gms.

In a similar case 25 yr old female was evaluated for complaints of episodes of gross haematuria with recurrent fever with chills since 3 mths. On investigations sonography of abdomen showed multiple paraaortic lymphadenopathy.

On laparoscopy peritoneal biopsy showed necrotising caseating granulomas. Urine r/m showed active urinary sediment with proteinuria of 2.5 gms with a serum creatinine of 1.9 mg%. Kidney biopsy showed class III IgA nephropathy. She was started on antitubercular treatment and after a month of follow up creatinine was 1.3 and proteinuria decreased to 0.9 gms.

2. Clinic based measurement of Central Aortic Systolic Pressure - Practical utility and advantages.

**Tushar D, Hardik S, Dilip K, Varun B, Shyam D, Kirpalani AL**

*Background:* Central aortic blood pressure is established as a strong predictor of cardiovascular events independent of the brachial blood pressure especially in patients with chronic kidney disease (CKD). Central aortic systolic pressure (CASP) is one of the surrogate markers of large artery stiffness, which in turn influence microcirculation of brain and kidney as also the ventricular workload and coronary perfusion. Simple and noninvasive devices are now validated worldwide to measure CASP in outpatient clinics. However there is lack of data on CASP and its significance in our Indian subjects.

*Aims and Objectives:* 1.To measure CASP across a cross-section of our patient population and assess the demographic profile using A-Pulse CASP device.

3. To compare and analyse CASP measurements vs brachial blood pressure measurements in patients (pts) with Hypertension and CKD.

*Material and methods:* Basic demographic and anthropometric data was recorded. Brachial BP was measured by oscillometric method using A-Pulse device (Healthstats International, Singapore, approved by USFDA) in the sitting position. CASP was then measured by applanation tonometry and radial transfer function technique by placing the sensor of the A-Pulse CASP device over the ipsilateral radial artery.

*Results:* 90 consecutive subjects (males-60; females-30) with mean age 47.11±14 years were included in the study.

- Subgroups were: Group A- Normotensive healthy volunteers (n=25); Group B - pts with Hypertension without CKD (n=16); Group C - pts with CKD, stage 1-4 (n=27) and Group D -with CKD - 5D, on haemodialysis (n = 22).
- In Group A, mean CASP (115 ± 10.8) values across all age groups corresponded to the age censored worldwide reference range, while in groups B, C and D, 51/65 (78%) pts had mean CASP values significantly higher ( $p < 0.05$ ) than the age censored reference range.
- Subjects with normal Brachial Pulse Pressure ( $< 50$  mmHg, n=40) had near normal mean Brachial systolic BP [BASP](124.98 ± 14.27) and CASP (117.35 ± 13), while those with high Brachial Pulse Pressure ( $>50$  mmHg, n=50) had correspondingly higher mean BASP(147.48 ± 14.84 ) and CASP (136.2 ± 15.36 ) values when compared to the age censored reference range. In the latter subgroup , younger subjects (age  $< 50$  years, n = 23) had more significant elevation of CASP ( 136.73 ± 13.94 ) than BASP (148.26 ± 13.40) ( $p < 0.05$ ).
- 30/55 pts with high BMI ( $> 25$  kg/sqm) in younger age group (age  $< 50$  years) had comparable BASP (135.9 ± 16.91), but mean CASP (126.9 ± 15.32) was significantly higher ( $p < 0.05$ ) than age censored reference range.
- Literature shows that the mean difference between absolute CASP and BASP values narrows down with advancing age in normal people and this is confirmed in our normal

volunteers. In groups B, C and D the mean difference between BASP and CASP was similar (10.8 vs 9.3,  $p > 0.05$ ) in younger (age < 50 years,  $n = 29$ ) versus older (age > 50 years = 36) age group; thus emphasizing that younger pts with hypertension and CKD exhibit accelerated vascular ageing.

- Pts ( $n=22$ ) having longer duration (> 5 years) of CKD had significantly higher CASP (136 +17 vs 127+14 ;  $p$  value) as compared to pts ( $n=27$ ) with lesser duration of CKD (< 5 years).

*Conclusions:* Our study validates the use of A-pulse device for measurement of CASP.

- CASP measurement may be better than BASP measurement in identifying high CV risk early in young and obese individuals.
- Younger patients with hypertension and CKD having high brachial pulse pressure (>50 mmHg) should undergo central BP assessment
- Office based measurement of CASP is a necessary additional tool for thorough cardiovascular risk assessment, especially in patients with CKD.

### 3. IgG4 related tubulointerstitial nephritis and acute kidney injury

**Tushar D, Hardik S, Dilip K, Varun B, Shyam D, Kirpalani AL**

*Background:* IgG4 related disease is a relatively new entity affecting multiple organs including pancreas, salivary gland, lacrimal gland, lung, lymph node, retroperitoneum and kidney. It is often characterised by elevated serum IgG4 level and tissue infiltration with IgG+ plasma cells admixed with other cell most often eosinophils.

We report a case of 50 year old male who presented with acute onset of hypertension, weakness and raised serum creatinine. Investigations showed peripheral blood eosinophilia (absolute eosinophil count -2912 per cmm), low complement levels, raised gamma globulin levels and bulky kidneys on ultrasound. Kidney biopsy showed "IgG4 positive rich plasma cells with acute tubulointerstitial nephritis and fibrosis." Blood levels of IgG4 were also elevated (2200 mg/dl). Complete remission of proteinuria was achieved with glucocorticoid treatment at 6 weeks without need of additional immunosuppressant.

*Conclusion:* As the concept of IgG4 related renal disease is proposed recently, it remains a largely under recognised entity in regular clinical practice. It should be considered in the differential diagnosis of acute tubulo interstitial nephritis, particularly in elderly men who presented with eosinophilia, hypocomplementaemia and other extrarenal manifestations. Prompt diagnosis would be rewarding given the dramatic response to steroids in the early stages of the disease. Early diagnosis and therapy is vital for the recovery of renal functions and overall prognosis.



4. Successful Pregnancy in a patient on long term haemodialysis

**Shyam D, Hardik S, Prema K, Tushar D, Varun B, Dilip K, Kirpalani A L**

Successful conception and pregnancy in women on haemodialysis is very uncommon. Antenatal care, dialysis care and labour procedure are usually challenging but rewarding. We present here a case report of a 36 year old lady on haemodialysis since last six years who had a successful outcome of pregnancy at our centre. Patient had irregular menstrual cycles and was thus accidentally detected pregnant at 22nd week of gestation, when she was investigated for abdominal distension. At presentation, her Haemoglobin was 6.8 gm/dl, Calcium 8.1 mg/dl and Albumin 2.9 mg/dl. Dialysis frequency was increased to alternate days, a larger surface area dialyser and low dose heparin was used during dialysis. Her medications were optimised to achieve haemodynamic and metabolic balance. Foetal health and other parameters were found to be satisfactory. She had reasonably good health till the 30th week, when she had premature contractions followed by vaginal delivery of a 1.8 kg, premature but healthy baby girl. Baby and mother were discharged after a week of hospital stay.

5. Tumour Induced Hypophosphataemia

**Mahendra Mulani, Viswanath Billa**

Tumour-induced osteomalacia/hypophosphataemia (TIO) is a rare paraneoplastic syndrome with overproduction of fibroblast growth factor 23 which is a phosphaturic agent. This leads to chronic hyperphosphaturia and hypophosphataemia, associated with inappropriately normal or low levels of 1, 25-dihydroxyvitamin D. Diagnosis of this disease is often challenging.

The following case report describes a middle-aged female with symptoms of bone pain and severe muscle weakness with severe disability who was later on diagnosed as a TIO. Her phosphorus was 1.5 mg/dl (normal 2.5-4.5 mg/dl). FGF23 level 725 (normal <180). The tumour responsible for the symptoms was localised in her brain and its resection resulted in normalisation of blood chemistry as well as her clinical complaints. Subsequent microscopic examination revealed a phosphaturic mesenchymal tumour. The authors reinforce the importance of recognition of this disease, since severe disability and even death can be avoided with the surgical removal of the causative tumour.

6. "Is twice per week dialysis good enough? Residual renal function holds the key."

**Varun B, Hardik S, Dilip K, Tushar D, Shyam D, Kirpalani A L**

*Background:* Patients with end stage renal disease (ESRD) are conventionally put on thrice per week maintenance haemodialysis (MHD) as per KDOQI guidelines. However a large number of patients in our country fail to comply due to issues related to finance, logistics, availability of dialysis facility and family support. We investigated whether the

patients having preserved residual renal function (PRRF) [i.e. average of interdialytic urea and creatinine clearance >2 ml/min] can be continued on twice per week MHD to overcome the above issues and ensure compliance.

*Aims & Objectives:* To assess patients with PRRF on twice per week MHD (group A) and compare their epidemiological, biochemical, haemodynamic and metabolic parameters to those patients with PRRF on thrice per week MHD (Group B) and those on twice per week MHD with low RRF(LRRF) [i.e. average of interdialytic urea and creatinine clearance < 2 ml/min] (Group C).

*Material & Methods:* 30 pts with ESRD who were on MHD at our centre for a duration between 3 months and 2 years were included in this study. There were 10 pts each in groups A, B and C. RRF was measured in each patient at the start of the study by calculating the average of urea and creatinine clearance during the inter-dialytic period. Basic demographic profile, recent biochemical parameters, blood pressure, inter-dialytic weight gain, intra-dialytic complications and number of dialyser reuse were recorded and results analysed with appropriate statistical tests.

*Results:* Mean age of groups A, B and C were  $47.7 \pm 11.47$ ,  $54.3 \pm 15.38$ ,  $43.9 \pm 16.96$  yrs respectively. Mean duration on MHD was  $12 \pm 6.95$  months in group A,  $8 \pm 7.42$  months in group B,  $18 \pm 7.03$  months in Group C.

There was no statistically significant difference in the mean Haemoglobin, Serum Albumin, Calcium, Phosphorus, Potassium and Bicarbonate values and average inter-dialytic weight gain between Groups A and B, Dosage of diuretics, erythropoietin and anti-hypertensives was similar between the two groups. Group B had a significant increase (30%) in intradialytic complications (hypotension and cramps) as compared to Group A.

Group C had comparatively lower haemoglobin, albumin, calcium & bicarbonate values and higher potassium, phosphorus values as well as a larger inter-dialytic weight gain as compared to Group A. Dosage of diuretics, erythropoietin and anti-hypertensives was higher as compared to Group A. A 50 % higher incidence of intra-dialytic complications, need for blood transfusions and hospitalisation was noted in Group C. A larger sample size would validate above results from statistical point of view.

*Conclusion:* Patients with preserved residual renal function on twice weekly MHD have similar profile and outcome with lesser intra-dialytic complications as compared to patients on thrice weekly MHD with PRRF. However when residual renal function declines to < 2 ml/min, they should be switched to thrice weekly MHD to improve their clinical outcome.

7. "Tacrolimus associated thrombotic micro-angiopathy- a rare occurrence."

**Varun B, Hardik S, Tushar D, Shyam D, Kirpalani AL**

The development of thrombotic microangiopathy (TMA) associated with the use of cyclosporine has been well documented. The last decade has seen the emergence of



tacrolimus as a potent immunosuppressive agent. With the more widespread application of tacrolimus in organ transplantation, tacrolimus-associated TMA has also been recognised. However, literature regarding the incidence of TMA in patients exposed to tacrolimus is limited. We report a case of a living donor renal transplant recipient who developed tacrolimus-induced TMA that responded to the withdrawal of tacrolimus alone. Tacrolimus induced TMA should be suspected and investigated in patients who develop acute accelerated acute graft dysfunction.

#### 8. Equivocal Pelviureteric Junction Obstruction in Donor Kidney- Challenges in Management

**Areef Tamboli, Umesh Oza, S W Thatte, Bichu S**

*Abstract:* PUJ obstruction is one of the most important causes of upper urinary tract obstruction. Intermittent or Partial PUJO is a challenge to diagnose and deal with and produces difficulties intraoperatively. We present a case of a young recipient who received renal graft from his aunt. Donor kidney had box shaped renal pelvis otherwise delayed but unobstructed drainage pattern on diuretic renogram. Intraoperatively however it manifested as inadequate drainage needing ultimately pyelonativeureterostomy.

*Introduction:* Borderline or intermittent PUJ obstruction is a challenge to diagnose and manage. It may have serious implications in recipient. Diuretic renogram commonly used in these cases gives equivocal results in 15-17% cases.

A 25-year-old male underwent a live-related renal transplant for end-stage renal disease in March 2015. He received a haplo-matched kidney from his aunt. Imaging of the donor showed a box-shaped extra-renal pelvis on the left side. The donor never had any symptoms and the preoperative well-tempered diuretic renogram revealed a normal drainage pattern with no evidence of obstruction. Intraoperatively however there was inadequate drainage from PUJ, with morphology suggestive of PUJO. So decision for pelvi-native ureterostomy was taken. DJ stent was placed across the anastomosis. Stent was removed after 3 wks. However patient couldn't pass urine. USG showed ballooning of renal pelvis. PCN was put, as wire couldn't be negotiated across PUJ. Later retrograde DJ was put. Stent removed after 2 wks however patient had similar problems. Decision for re-exploration was taken. Intraoperatively PUJ was nondependent, so redo anastomosis was done over stent. Stent was removed after 4 wks, patient passed urine well. Throughout postoperative course was uneventful with stable graft function with serum creatinine maintained at 1 mg%.

#### 9. "Are Radiological Measurement Of Kidney Volumes Accurate?"

**Varun B, Deepa U, Parag T, Shrirang B, Viswanath B.**

*Background:* There is an established correlation between kidney size & kidney function. This size is conventionally viewed in 2 dimensions, length & breadth. USG & CT

are capable of measuring kidney volume by including depth as the 3rd dimension. Therapeutic decisions are based upon these measurements, hence accurate & validated methods of renal metrics are important.

*Aim:* Comparing kidney volumes by USG, CT & water displacement. Correlation of these volumes with that kidney's DTPA GFR, & the immediate post transplant steady creatinine.

*Methods:* 34 donor kidneys were studied. GFR of these kidneys was recorded with a DTPA scan. Kidney volumes were measured using CT (3D reconstruction) & USG (ellipsoid formula). The actual kidney volume was measured by the water displacement method (Archimedes principle) intraoperatively, after the step of perfusion. A correction factor of 13 ml was subtracted from the actual kidney volume to account for the volume of the ureter, perinephric & hilar fat, renal vessels. This factor was calculated by measuring the volume of this tissue in 10 kidneys in the autopsy room. This gave the corrected kidney volume (CKV). The lowest steady serum creatinine during the immediate postoperative period was used as a measure of adequacy of graft function. We compared the 3 kidney volumes with the DTPA GFR & with postoperative creatinine. Patients who developed infections, AKI and rejections (n=5) were excluded from this part of the analysis.

*Results:* The mean age of the donors was  $50.9 \pm 9.5$  yrs. The mean volume of the kidneys was  $168.17 \pm 33.64$ ml by water displacement,  $129.29 \pm 20.6$ ml by CT &  $118.5 \pm 28.18$ ml by USG. The mean steady creatinine postoperatively was  $1.11 \pm 0.26$ . The mean DTPA GFR of the transplanted kidney was  $41.16 \pm 9.98$ ml. The CT measurement underestimates the CKV by 23%. The USG measurement underestimates the CKV by 29%. The CKV correlates significantly with postoperative steady serum creatinine ( $p = 0.05$ ). There was no statistically significant correlation between the 3 volume measurements with DTPA GFR.

*Conclusion:* Radiological measurements underestimate true kidney volumes. The volume of the kidney influences the steady state postoperative serum creatinine.