

Report on ICMR International Fellowship (ICMR-IF) in Training and Research Abroad

1) Name and Designation of ICMR-international Fellow (ICMR-IF):

Dr Girish C Bhatt, Associate Professor, Department of Pediatrics, All India Institute of Medical Sciences(AIIMS) Bhopal

2) Address: Flat no 4012, type IV, AIIMS Residential Complex, Saket Nagar, Bhopal-462024

3) Frontline area of research in which training/research was carried out:

Pediatric Nephrology (Dialysis and Transplantation)

4) Name and address of Professor and Host Institute:

Dr Martin Bitzan, Division Director, Pediatric Nephrology, McGill University Health Centre, Canada. E mail: martin.bitzan@mcgill.ca

5) Duration of Fellowship: 15th July 2017 to 15th November 2017

6) Highlights of the work conducted:

Technique/Expertise acquired:

Dialysis and Apheresis: I attended Pediatric dialysis and apheresis day care centre and learnt to adjust chronic haemodialysis(HD) prescription to achieve adequate dialysis; management of complications related to hemodialysis, and multidisciplinary care of children with end stage renal disease (ESRD).I learnt about the indications and prescription of plasmapheresis for a variety of renal and extra-renal diseases.

I also attended acute haemodialysis rounds in Paediatric intensive care unit(PICU) where I learnt details of acute haemodialysis prescription for

neonates and children. Of interest was learning hemodialysis prescription for a 28-day neonate with maple syrup urine disease (MSUD) having extremely high leucine levels which were normalized within a period of 4-5 hrs of HD. I also had opportunity to learn indications and prescription of continuous renal replacement therapy (CRRT) in PICU. I've also got opportunity to sharpen my skill in the management of children on continuous ambulatory peritoneal dialysis.

Pediatric renal transplantation: I learnt about pre-transplant evaluation and had opportunity to see the post-operative management and clinical course of both diseased donor and living related kidney transplantation in children. I also learnt about management of renal allograft rejections as well as follow up care of renal transplant patients. During this period, I've seen transplant patients with various infectious complication and learnt about specific management of these complications as well as titration of immunosuppressive agents.

Pediatric hypertension and ambulatory blood pressure monitoring (ABPM): I hone my existing base knowledge on proper interpretation, analysis and technical details of ABPM use in Pediatric population as well as doppler technique for measurement of blood pressure in neonates and young infants.

Miscellaneous: I attended various outpatient clinics and saw patients with a wide spectrum of diseases including difficult to treat nephrotic syndrome, glomerulonephritis, Alport's syndrome, HUS, CAKUT, cystic kidney diseases, hematopoietic transplant associated thrombotic micro-angiopathy, cystinosis, cystinuria, vasculitis, Henoch-Schönlein purpura and tubular disorders,

including a variety of renal genetic diseases. I learnt about the clinical and genetic work up of these patients as well as novel therapeutic modalities such as treatment of atypical HUS, hematopoietic transplant associated thrombotic micro-angiopathy with monoclonal antibody eculizumab, plasmapheresis and use of Rituximab in a patient with Rapid-onset Obesity with Hypothalamic dysfunction, Hypoventilation and Autonomic Dysregulation (ROHHAD) syndrome, use of Rituximab in difficult to treat nephrotic syndrome and in pauci-immune glomerulonephritis.

I attended various multidisciplinary clinical meetings such as transplant, nephro-pathology, peritoneal dialysis, hemodialysis and in-patient discussions. I attended various teaching programmes with other nephrology fellows.

Presentations:

- Updated guidelines on Pediatric hypertension and ambulatory blood pressure monitoring-For nephrology fellows
- Phenotypic mimicry-C3 glomerulonephritis and lupus nephritis- Teleconference presentation to ISN-SRC St John's Bangalore, India.
- Adenosine antagonists for prevention of acute kidney injury in neonates and children- A systematic review and meta-analysis- Presented in annual conference of Indian Society of Pediatric Nephrology (ISPN) 2017.

Research results, including any papers, prepared/submitted for publication:

- Conceptualize and oversaw systematic review and meta-analysis on Adenosine antagonists for the prevention of acute kidney injury in

neonates and children-A meta-analysis. *Bhatt GC, Gogia P, Bitzan M.*

Submitted for publication.

- Collected clinical and laboratory data of patients with difficult to treat nephrotic syndrome who were treated with a novel medication and prepared a manuscript.
- Participated and collected data for an ongoing Canada-wide retrospective study on the treatment and outcome of Shiga Toxin-producing *Escherichia coli* (STEC) infections in the emergency room.
- Participated in formulation of questionnaire for a nationwide survey on use of Rituximab for nephrotic syndrome in Canada.
- Collected data on use of Rituximab for difficult to treat nephrotic syndrome.
- Prepared and submitted an ongoing Cochrane protocol on "Fenoldopam for prevention and treatment of acute kidney injury"
- Bhatt GC. American Academy of Pediatrics (AAP) Updated Guidelines on Hypertension in Children and Adolescents- Salient Features. *J Child Obes* Vol No 2 Iss No 4:e103. doi: 10.21767/2572-5394.100038

Proposed utilization of the experience in India

I shall be able to utilize my learning for better management and care of children with renal disorders. We already have a Pediatric Nephrology clinic at AIIMS Bhopal, and soon we shall start continuous peritoneal dialysis (CAPD) for children with end stage renal disease and acute hemodialysis in