ISNSCCON 2024 CPC PROPOSAL

42-year-old male

He was normal till 3 years back when he developed tiredness, loss of weight, polyuria, and polydipsia after recovering from COVID-19. He lost 12kgs of weight over 6 months. He got his blood glucose tested by himself which showed FBS of around 300mg/dl and PPBS of around 380mg/dl, for which he consulted Ayurveda Hospital and was taking medicines as advised. One month later he noticed increased frothing of urine and consulted a nephrologist. He was found to have serum creatinine of 5mg/dl, Urine P:C ratio was 3.1gm/gm, Hb 7.9gm/dl, serum albumin 4.7gm/dl and his kidneys were shrunk (RK 7.3cm, LK 7.8cm). He was started on treatment for his kidney disease and diabetes, details of which are not available. After 2 weeks his blood tests were repeated, and as serum creatinine was 10mg/dl, he was advised to start dialysis. However, he took herbal medicine for around 6 months and subsequently was initiated on hemodialysis in January 2021 when his creatinine increased to 15mg/dl and he had uremic symptoms. He initiated haemodialysis using a right internal jugular vein temporary catheter. A left forearm AVF was subsequently created and used for dialysis. He received three units of packed red blood cells at this time. He was under treatment with EPO and intermittent doses of IV iron and did not require blood transfusions again. His diabetic medications were stopped, and his blood glucose reports were normal. He was on regular hemodialysis without any significant events. One year after the initiation of dialysis, in 2022, he was told he had high blood pressure and was started on antihypertensive medication (a single drug). He was on twice-a-week haemodialysis for two years, and then the frequency was increased to thrice a week. His dry weight was 39kg with an interdialytic weight gain of 3kgs and minimal residual urine output (<100ml/day).

He had no h/o kidney stone disease or recurrent UTI in the past. He had no family history of kidney disease. There was no h/o tuberculosis or exposure to active TB among his acquaintances. He did not have any evidence of diabetic retinopathy or other microvascular or macrovascular complications of diabetes. He had no addiction. Pre-transplant cardiac evaluation including stress myocardial perfusion imaging was essentially normal, except for concentric LVH on echocardiogram (Table 01).

He was worked up for kidney transplantation with his wife as the living donor in 2023. Immunological workup, including screening DSA by LUMINEX platform (not single antigen bead assay) and flowcytometry crossmatch were negative (crossmatch performed twice). He received rATG (Thymoglobulin) 3mg/kg in two divided doses as an induction agent and was maintained on tacrolimus, MMF, and prednisolone. His nadir serum creatinine was 0.97mg/dl. He developed hyperglycemia after transplantation and was started on insulin for glycemic control. His post-transplant period was otherwise uneventful. He had persistent hypomagnesemia and was on oral magnesium supplementation. He was on regular follow-up and was doing well, he gained weight and was 43.5kg at 3 months after transplantation (39kg at transplantation). He received prophylaxis with Valganciclovir for 100 days and he was on Septran.

Table 01: Pre-transplant Investigation

HB	12	**Ultrasound of abdomen and pelvis**: LIVER: 13 cm, normal echoes, no focal lesion, no IHBRD PORTAL VEIN: normal hepatopetal flow GALL BLADDER: partially distended, no calculus, no sludge CBD: not dilated. PANCREAS: head and body visualized-appear normal; rest obscured by bowel gas SPLEEN: 10.1 cm, no focal lesion RIGHT KIDNEY: 7.1 cm, increased echoes, CMD poor, no calculus, no HUN LEFT KIDNEY: 6.1 cm, increased echoes, CMD lost, no calculus, no HUN. URINARY BLADDER: empty No FFA **Echocardiogram**- Concentric LVH, Mild global LV hypokinesia, LVEF – 45-50%, Mild to moderate MR, Moderate TR **UGI endoscopy** – normal **Stress MPI** -The cavity of the left ventricle (LV) is mildly, dilated. Mild relatively increased tracer uptake is noted in the septum of the LV myocardium - likely septal hypertrophy due to systemic hypertension. Impression: Scan reveals- Mildly dilated LV myocardial cavity
TC	5.8	
DC	N69/L20/E5	
PLT	2.23	
B Urea/S Creat	118/8.06	
Na/K	142/5.18	
Ca/P/Mg/UA	9.1/4.6/2.6/7.5	
iPTH	226	
TSH	5.3	
FBS/PPBS **TC/TGL/LDL/HDL**	69 / 73 139/99/93/41	
AST/ALT	11/4	
ALP	83	
TP/ALB	6.6/4.4	
URE	Protein 2+, RBC -3	
Urine PCR	Not done as urine output was <100ml/d	
Urine C&S	sterile	
Ferritin	1024	
Blood group	AB positive	
HBsAg & HBV DNA **Anti HCV & HCV RNA** **HIV 1 & 2**	Negative	**CMV IgG** – not done. **EBV IgG** – not done.

From the fourth month after transplantation, he stopped gaining weight and lost 1kg over 2 months. His appetite was good, he had no loose stools, white-coloured stools, abdominal distention, nausea, or vomiting. He did not have a fever or respiratory symptoms. He was found to have progressively rising serum creatinine with increasing proteinuria in the 5th month after transplantation. On Physical examination he did not have enlarged lymph nodes, there was no organomegaly on abdominal examination. There were no adventitious sounds on the auscultation of the chest, cardiac murmurs or additional sounds. There were no focal neurological deficits, and his higher mental functions were normal. His blood glucose levels were well controlled on insulin, he had no evidence of ketosis. CXA PA was WNL, Urine Culture was repeatedly sterile. Lab reports and USG of the graft are described in Table 02. His BP was well controlled on 5mg/day of Amlodipine.

Table 02: Post-transplant Investigation

	1 week	1 Month	4 Months	5 months
S Creat	0.8	1.1	1.2	2.4—3.9
Na/K	132/4.3	139/4.5	134/4.4	132/4.55
Ca++/iP	8.0/2.1	10/2.3	-	10.6/4.8
Mg++	1.4	1.7	-	1.5
Serum Alb	3.47	4.6	-	4.4
Total Protein	5.8	6.1	-	6.9
Uric acid	2.6	-	-	4.7
AST/ALT	18/13	14/5	-	22/8
ALP	98	62	-	91
Urine M/E	RBC – 0.2 WBCs – Neg	-	-	RBC – 0.0 WBCs – Neg
Urine P:C Ratio	0.71	0.44	1.7	24hr Prot –2.8gm 24hr Creat – 435 mg 24 Vol – 3.3 lit
CBC	8.1 / 9450 / 2.88L N-91% L-3.7 %	11.9 / 9400 / 2.1L	12.6 / 8700 / 1.8L	12.2 / 7000 / 1.8L N-82% L-8.7%
P Smear	RBC: Normocytic normochromic RBCs. No rouleaux formation seen. WBC: Normal count with neutrophilic preponderance. No blasts/atypical cells seen. PLATELETS: Appear adequate	-	-	RBC: Normocytic normochromic RBCs. No rouleaux formation seen. WBC: Normal count with neutrophilic preponderance. No blasts/atypical cells seen. PLATELETS: Appear adequate
TSH	-	-	-	2.6
iPTH	-	-	-	21.5
ESR	-	-	-	37
25 (OH) Vit D	-	-	-	37.98
DSA	-	-	-	Negative
Tac C0	7.4 ng/mL	7.1 ng/mL	5.6 ng/mL	6.5 ng/mL
USG KUB (at 5 months)	GRAFT KIDNEY: noted in RIF, 13.6 x 5.8 cm, heterogeneously increased echoes, CMD +, no calculus, no HUN. RIGHT KIDNEY: 5.6 cm; LEFT KIDNEY: 5.5 cm; increased echoes, CMD poor, no calculus, no HUN in both kidneys. BLADDER: partially distended, no moving echoes IMPRESSION: Bulky and heterogeneously increased echoes in graft kidney			

A graft biopsy was performed followed by some further tests, and a final diagnosis was made.