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Severe Osteomalacia in an Adult HIV Patient on Tenofovir Disoproxil Fumarate

Dear Editor,

A 40-year-old with a HIV infection, on antiretroviral therapy which included tenofovir disoproxil fumarate for the last 14 years, presented with severe back pain. There was weakness of bilateral lower limbs, hypokalemia (2.4 meq/L), with normal anion gap metabolic acidosis, hypophosphatemia (1.5 mg/dl), hypocalcemia (3.8 mg/dl), elevated alkaline phosphatase, and serum creatinine (2 mg/dl) at presentation. Vitamin D and parathyroid hormone levels were within normal range. While urine analysis revealed glycosuria but nil albumin in the urine, the 24-hr collection had more than 1 g of protein. In the face of low serum phosphate, she had a 24-hr urine phosphate of 502.9 mg suggesting phosphaturia as the

cause of low serum phosphate. Her autoimmune workup, serum, and urine electrophoresis also turned out negative.

Chest X-rays showed pseudo-rib fractures (Milkman's fracture) on the second and sixth ribs on both sides. A Tc99 bone scan demonstrated foci of abnormally increased tracer concentration in corresponding bones and other multiple sites, as seen in Figure 1.

A diagnosis of tenofovir disoproxil fumarate induced Fanconi syndrome with severe osteomalacia was made. Switching to another tenofovir prodrug, tenofovir alafenamide, and repletion of calcium, phosphates, potassium, and sodium bicarbonate by intravenous and oral routes resulted in significant improvement over a period of 2–3 weeks.

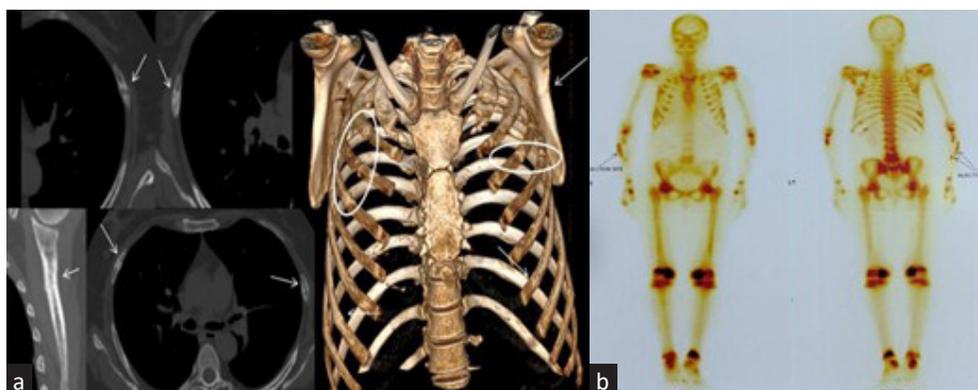


Figure 1: (a) Computed tomography thorax imaging and 3D reconstruction showing pseudofractures or Milkman's fractures of multiple ribs bilaterally and medial borders of both scapulae are shown by the white arrows and white circles respectively. (b) Tc 99 bone scan showing increased uptake in the same areas.

Vigilance during tenofovir treatment is recommended by the EASL and IDSA. Serum creatinine and electrolytes, including phosphate, should be obtained every 3 months in the first year and every 6 months thereafter.^{1,2} TDF should be discontinued for serum phosphate below 2 mg/dL or creatinine clearance below 50 mL/min.² Stopping TDF typically leads to renal recovery over months, though there have been reports of persistent renal impairment.³

Conflicts of interest: There are no conflicts of interest.

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First Pediatric Deceased Donor Kidney Transplant in Chhattisgarh

Dear Editor,

In India, pediatric kidney transplant (KT) was started in the 1990s.¹ In the United States, approximately 800 pediatric KTs are performed annually. No national registry tracks the number of pediatric transplants performed or on the waiting list in India.² There are a few pediatric transplant facilities in the public sector. We share our experience with the first pediatric deceased donor kidney transplant (DDKT) in Chhattisgarh.

A nine-year-old male was diagnosed with end-stage kidney disease in November 2022. His family was counseled about preemptive KT; however, no suitable donor could be identified. He required emergency hemodialysis owing to fluid overload followed by the initiation of continuous ambulatory peritoneal dialysis. Later, he was registered for the DDKT program, and after being waitlisted for nine months, he was offered a kidney from a 15-year-old child who was declared brain-dead after a traumatic brain injury.³ He was discharged with a nadir creatinine of 0.21 mg/dL on postoperative day ten. At two months of follow-up, the child is doing well with creatinine 0.42mg/dL.

State Organ and Tissue Transplant Organisation (SOTTO) was formed in Chhattisgarh in 2022,⁴ which paved the path for deceased organ donation. The organ allocation policy of SOTTO gives priority to pediatric patients if the deceased donor is a child.

Pediatric kidney transplantation rates in developing countries are reported to be as low as < 4 pmcp (per million child population).⁵ Finding a suitable living donor is a critical limitation. Children should not be left out in deceased donor registrations. Since November 2022, 14 DDKT have been done in Chhattisgarh, highlighting the role of public sector hospitals in kidney transplantation and making it accessible to children.

Conflicts of interest: There are no conflicts of interest.

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