

INTRODUCTION

- Children with acute kidney disease (AKD) on CRRT in our center were found to have osteopenia/fractures.
- While elevated FGF23 (size-31 kDa) and low α -Klotho (size-63kDa) are the earliest mineral bone disease (MBD) markers in chronic kidney disease, little is known about their role in MBD with AKD including clearance (diffusive and convective) characteristics.

AIM

- To determine FGF23 & α -Klotho clearance in children receiving continuous veno-venous hemodiafiltration (CVVHDF).

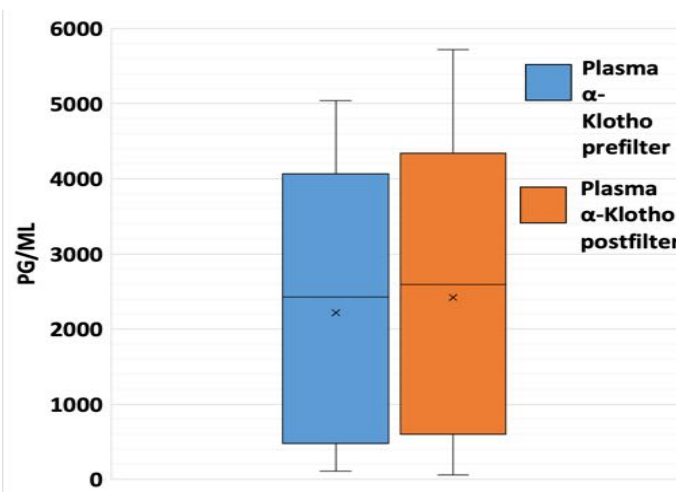
METHODS

- Ongoing prospective cohort study
- Inclusion: ≤ 18 yrs on CVVHDF
- Exclusion: ECMO/LVAD/renal dysplasia/transplant
- Simultaneous pre, post filter plasma, effluent FGF23, soluble α -Klotho were measured by ELISA.
- Samples were collected every week until Day 28.
- FGF23 clearance was compared to small solute clearance (using urea).

RESULTS

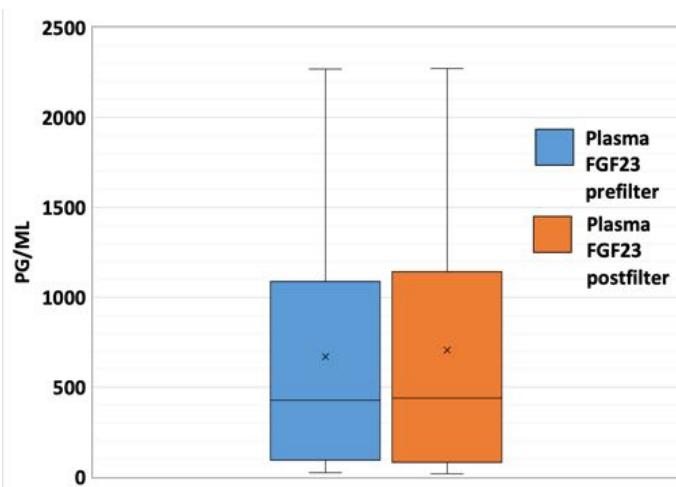
- 8 patients; 13 samples each of plasma & effluent
- Age: Median 46 months (IQR 4.5, 107)
- Patients had variable prescribed CRRT dose: Median 84 mL/kg/hour (IQR 65, 117)

Pre & post filter α -Klotho



No difference in level (p=0.78)

Pre & post filter FGF23



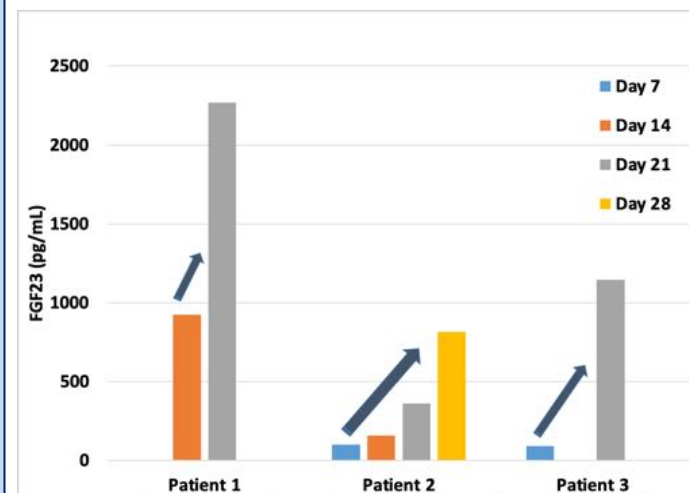
No difference in level (p=0.9)

- FGF23 was undetectable in 9/13 effluents.
- In 4 effluents with detectable FGF23, clearance was minimal compared to actual dose delivered [effluent conc/plasma conc * effluent vol/hr/kg] (Table).
- α -Klotho was undetectable in effluents.

Table: FGF23 clearance v/s actual dose delivered (only 4 effluents had detectable FGF23)

Actual CRRT Dose (ml/kg/hr)	FGF23 Clearance (mL/kg/hr)
67	13
67	6
99	23
56	7

FGF23 over time



Level increased over time in patients receiving CRRT (only 3 pts had >1 sample over time)

CONCLUSIONS

- There was minimal/no FGF23 clearance with CVVHDF.
- Receiving CVVHDF even at higher clearance would not alter FGF23/ α -Klotho concentrations.
- Rise in FGF23 proportional to duration of CRRT in our study warrants further exploration regarding role of FGF23 in acute kidney disease/ AKD-MBD.