Assessing Baseline Cardiovascular Disease for Kids Initiating Kidney Replacement Therapy: ABCD4Kids Study

ISN INTERNATIONAL SOCIETY OF NEPHROLOGY

Post-hoc analysis of prospective multicenter cohorts
The 4C & 3H study

Children with CKD stage 4-5
Median age 14 years
eGFR 12.2 ml/min/1.73m^2

3-time points, longitudinal evaluation
median 35 days, 1-yr & 2-yr before KRT start

- **Structural and functional surrogate CV measures**
- **Modifiable CV risk factors**

Surrogate measures of CV damage

- **Carotid intima media thickness**
- **Pulse wave velocity**
- **Left ventricular mass index**
- **Mid-wall fractional shortening**

Patients approaching KRT
N= 248

>3 CVD risk factors: **79% patients**
>2 CVD risk factors: **92 % patients**

76% patients had ≥1 abnormal CV measure at KRT start

Prevalence of **aortic stiffness** accelerated **1-yr before KRT start**

LVH (concentric) significantly **increased over 2-yr before KRT-start**

54% of patients with concentric LVH showed systolic dysfunction

Strong linear association of modifiable risk factors including diastolic BP and BMI with CV measures

4C, Cardiovascular Comorbidity in Childhood CKD; 3H, Haemodiafiltration, Heart and Height; KRT, Kidney replacement therapy; CVD, cardiovascular disease

Conclusion: A high burden of cardiovascular damage is progressively accrued in the years preceding KRT onset, largely from modifiable risk factors

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WCN'24