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Hypertension in chronic dialysis pediatric patients

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Introduction

This study aimed to report the frequency, treatment and complications of hypertension in children on chronic dialysis.

Methods

A cross-sectional analysis of all current pediatric maintenance dialysis patients from our tertiary referral center was performed. Data were analyzed using Microsoft Excel and STATA software version 13.

Results

From the 23 patients, sex ratio M:F=1:1.3, mean age 14.1 ± 3.7 years, 12 on hemodialysis, 11 on peritoneal dialysis, mean dialysis duration 30.7 ± 26.8 months, 70% presented hypertension. Some patients had other traditional cardiac risk factors: 2/23 a BMI Z score for age greater than +2 standard deviations and 14/23 dyslipidemia. NT-proBNP was determined and in 48% it had values >4999 pg/mL.

The most used antihypertensive drugs were ACE inhibitors (35%), ARBs (13%), beta blockers (40%), calcium channel blockers (70%) and others like central inhibitors in 13%. In 48% of cases more than one antihypertensive agent was needed.

Most often observed complication was related to the heart: 70% of patients had left ventricular hypertrophy and 48% cardiomyopathy demonstrated on echocardiography but no ischemic event. None had retinopathy or neurological complications.

Conclusions

We found a high prevalence of hypertension in dialysed children. Cardiac disease is the main cause of morbidity and mortality in children with end-stage renal disease and hypertension is the predominant cardiovascular risk factor in pediatric renal patients.

Almost one half of the patients needed more than one antihypertensive drug in order to control blood pressure values.

In the majority of cases cardiac involvement was discovered and almost one half of patients developed cardiomyopathy.

Protocols for regular screening, diagnosis, treatment and monitoring of hypertension are very important in the care of these patients.