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Are we slowing the rate of CKD progression in children? A single center study

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Background: Dyslipidemia (DLP) is part of Nephrotic Syndrome (NS) but its prevalence after remission is unknown. Anedoctal reports questioned the impact of DLP in the early development of arteriosclerosis in children with NS. DLP after remission of NS has been suggested to be a predictor of relapse. Some authors observed that persistence and severity of dyslipidemia correlated with duration of NS and frequency of relapses.

Objective: To determine the prevalence of DLP in children after remission of SDNS, FRNS and/or SRNS.

Methods: We reviewed all EHR of children with SDNS, FRNS and SRNS followed at our center. Secondary causes of NS, children with eGFR <80 % and/or with infrequent relapses of NS were all excluded. Steroid responsiveness, relapsing pattern, medications, biopsy and laboratory data were analysed. Kidney biopsy indications: age <2 yrs or >7 yrs at presentation; SRNS; SDNS/FRNS that failed mycophenolate mofetil (mmf) prior of using calcineurin inhibitors. SDNS/FRNS received mmf and if no response tacrolimus, for steroid sparing. Non-compliant patients received IV cyclophosphamide. If relapse seen after lowering tacrolimus doses rituximab was given. SRNS received tacrolimus. Persistent DLP was defined by abnormal lipid panel after 3 mos of sustained remission of NS or if remission was never achieved.

Results: Charts of 42 children were reviewed. Age at diagnosis: 8 months to 17 yrs (median=4 yrs); 19 were males; 14 AA, 9 H, 19 C; 7 obese. F/u time: 1 to 16 yrs (median=4 yrs); clinical pattern of NS: 28 had SDNS, 7 FRNS and 7 SRNS. Biopsy results: 15 MCNS, 11 IgMN and 8 FSGS. DLP was of long duration and recurrent associated with relapse pattern of the NS. Persistent DLP (all with LDH chol>150): 4/42 (ages: 3, 4, 5 and 15 yrs) - 2 MCNS, 2 FSGS (1 never remited); 1 was obese; none with positive FH. 31 children had normal lipid profile when in remission and 7 unknown. 1 case of DVT while in relapse. 1 case of carotid artery plaque (FSGS with LDL chol>300).Therapy: 32 tacrolimus, 9 cyclophosphamide, 29 mmf (22 after failing tacrolimus), 13 rituximab; Anti-lipid therapy: 1/42 (FSGS with persistent NS). ACEi were used if UProt/Cr >0.5.

Conclusions: DLP can be long lasting and persistent DLP in children in remission of SDND/FRNS or SRNS was seen in 7.3 %. Anti-lipid therapy was only use in the child with persistent NS. Gaps in knowledge in how to treat dyslipidemia in children with NS remain and clear guidelines need to be established. Signs of early arteriosclerosis should be added to our routine monitoring of children with persistent dyslipidemia.

Biography

M. Isabel Roberti, M.D., Ph.D. was appointed Director of Pediatric Nephrology and Transplantation at Saint Barnabas Medical Center in 2003. Dr. Roberti has been with the program as its Associate Director since it was established in 1996. Dr. Roberti completed her medical degree, residency, and pediatric nephrology fellowship at the Escola Paulista de Medicina in Sao Paulo, Brazil, and an additional fellowship in pediatric nephrology at Mount Sinai Medical Center, New York. She received her Ph.D. in pediatrics at the Hospital Sao Paulo. Dr. Roberti is board certified in both pediatrics and pediatric nephrology and is currently Clinical Associate Professor of Pediatrics in the Division of Pediatric Nephrology at Mount Sinai Medical Center.

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