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Tacrolimus in Steroid Resistant and Steroid Dependent Childhood Nephrotic Syndrome

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Abstract

Objective: To evaluate the efficacy of tacrolimus (Tac) in steroid resistant and steroid dependent nephrotic syndrome (NS) in children.

Material and Method: Retrospective chart reviews of 18 children from outpatient clinic at the Department of Pediatrics, Faculty of Medicine Siriraj Hospital were diagnosed with steroid resistant (SR) and steroid dependent (SD) NS during 2002-2008 were enrolled in the present study.

Results: The boy to girl ratio was 2:1. The mean age at diagnosis was 6.0 years (1-14.4 years). There were nine SR and nine SDNS. Nine patients had focal segmental glomerulosclerosis (FSGS), 4 IgM nephropathy and two had minimal change diseases (MCD). Three children did not receive renal biopsy. All patients received prednisolone at the start of Tac. The average time from the diagnosis to initiation of Tac was 3.5 years (0.2-14 years). The mean duration of Tac treatment was 1.3 year (0.3-6.2 years). The average Tac trough blood level was 4.09 mcg/L (1.3-9.9 mcg/L). The average dosage of Tac was 0.09 mg/kg/day (0.03-0.2 mg/kg/day). Thirteen (72.2%) children achieved complete response (CR). Five (27.8%) children did not respond to Tac. Nine (69.2%) children could stop prednisolone whereas four (30.8%) could lower prednisolone doses. The mean time to achieve CR was 24.6 days (0.1-3 months). The mean follow up period was 3.1 years (0.2-6.4 years). There was no change in an estimation of glomerular filtration rate (eGFR). In SRNS, there were CR in four (44.4%) and five (55.6%) children that FSGS did not respond to Tac. In SDNS, all responded to Tac and four (44.4%) children relapsed while on Tac and had upper respiratory tract infection (URI).

Conclusion: Tac is well-tolerated and effective treatment for SR and SDNS.

Keywords: Steroid resistant, Steroid dependent, Nephrotic syndrome

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