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New therapies for steroid sensitive nephrotic syndrome in children

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Tephrotic syndrome (NS) is one of the most frequent glomerular diseases seen in children. Children who go into complete remission following treatment with corticosteroids are classified as having "steroid sensitive" NS. In developed countries over 80% of children with idiopathic NS have steroid sensitive disease although response to steroids is somewhat tempered in developing countries, especially in black children, the majority of whom have steroid resistant disease. The exact pathogenesis of this condition remains elusive. Podocyte injury and proteinuria are the two main issues in the pathogenesis. Recent studies suggest alterations in both innate and adaptive immune responses. There is release of cytokines by T-cells as well as a strong contribution of B-cell immunity. Genetic studies have reported human leucocyte antigen (HLA) class II antigens DR and DQ associations liked to steroid sensitive NS and in small case studies, single gene mutations e.g. PLCE1 although to date no hemozygous mutations in NPHS1 or NPHS2 and WT-1 genes have been reported. Most children with steroid sensitive NS have multiple relapses and a significant percentage also develop steroid dependent NS. These children receive multiples courses of steroids and are at high risk of developing steroid toxicity. Patient with frequent relapses who develop steroid dependency thus require alternative treatment. Steroids sparing agents used include levamisole, cyclophosphamide, mycophenolate mofetil (MMF), calcineurin inhibitors (cyclosporine and tacrolimus), rituximab and vincristine. The steroid-sparing effects of these agents have greatly reduced the adverse effects seen with long-term use of steroids. Despite the wide arsenal of agents available, therapy needs to be individualized to achieve optimal care of each child. More randomized controlled trials are required to evaluate the therapeutic and economic efficacy of this agent, define criteria for selection of patients for use of particular agents and to determine the safety profile of these drugs in children. This presentation reviews the pathogenesis, clinical presentation, diagnosis, complications, management and long term outcome of children with steroid sensitive NS.

Biography

Rajendra Bhimma, MB, ChB, MD, DCH (SA), FCP (Paeds) (SA), MMed (Natal), is Associate Professor of Pediatrics, Principal Specialist, Department of Pediatrics and Child Health, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, South Africa. He has published over 50 articles in peer-reviewed journals. He is a member of the following Societies: American Association for the Advancement of Science, International Pediatric Transplant Association, International Society of Nephrology, South African Medical Association, South African Paediatric Association, South African Transplant Society. Research interest in glomerular diseases, especially HIV associated kidney diseases. He is also a long-standing member of the Biomedical Research Ethics Committee of the University of KwaZulu-Natal and an Editorial Board Member of two international journals.

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