

## **Seventh Paper**

**Title:** The Role of Prebiotic and Probiotic as an Adjuvant Therapy in Children with Idiopathic Relapsing Nephrotic Syndrome.

**Authors:** Rehab Ahmed Mohammed<sup>1</sup>, Sherin Khamis Hussein<sup>2</sup>, Sylvana Nady Gaber<sup>3</sup>, Fatma Abonaga Ahmed<sup>3</sup>, Walaa Abdelfattah<sup>4</sup>, Eman Sayed Said<sup>5,6</sup>, Amy Fakhry Boushra<sup>1</sup>

**Journal:** Saudi Journal of Kidney Diseases and Transplantation  
ISSN: print 1319-2442 Online 2320-3838

**Date:** Accepted September 2021

### **ABSTRACT:**

**Context:** Idiopathic nephrotic syndrome (INS) is the commonest cause of nephrotic syndrome in children characterized by existence of oedema, proteinuria and hypoalbuminemia and characterized by repeated relapses. The etiology remains unknown, new evidence for pathogenesis correlates to the dysfunction of T regulatory cells (T-reg) which could be due to dysbiosis of gut microbiota. **Aim:** To investigate the effect of prebiotics and probiotics as adjuvant therapies for children with relapsing INS.

**Settings and Design:** The study was designed as a prospective open label randomized clinical trial; involving 30 children diagnosed as relapsing NS. Children were randomly divided into two groups, group (1) treated with prednisone only and group (2) treated with prebiotics and probiotics in addition to prednisone. **Methods and Materials:** Fresh stool samples were collected from the children. Lactobacillus species were isolated and identified by conventional microbiological methods. Counting the total number of *Lactobacillus* species was performed for each stool sample. The populations of T-reg cells in peripheral blood mononuclear cells (PBMC) were analyzed using flow cytometry.

**Statistical analysis used:** For quantitative data, the median and interquartile range (IQR) were calculated. The Mann-Whitney-U test was used as a test of significance to

compare study groups. Regarding clinical data, an independent t-test was used to test the differences between the two groups of patients. For interpretation of the results of tests of significance, significance was adopted at  $P \leq 0.05$ . **Results:** Children treated with prebiotics and probiotics in addition to steroids showed a significant increase in (CD4+/CD25+/FOXP3+) T-reg in peripheral blood) and a higher count of *Lactobacilli* species in their stool with a significant decrease in the rate of relapses in this group compared to group 1.

**Conclusions:** Treatment with prebiotics and probiotics increases T-reg cells and decreases the rate of relapses of INS significantly.

**Key-words:** Prebiotics, Probiotics, T-reg, and Relapsing idiopathic nephrotic syndrome