Efficacy and Safety of Chitosan Coated Garments on Atopic Dermatitis Management: A Randomized Controlled Trial

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RATIONALE: Patients with atopic dermatitis (AD) may benefit from using textiles coated with antiseptic and skin repairing compounds. Chitosan, a natural biopolymer with inhibitory activity against Staphylococcus aureus and immunomodulatory properties has been considered potentially useful in AD management.

METHODS: Patients with AD (were randomly assigned in a 1:1 ratio to receive either chitosan coated or placebo cotton long sleeved pyjamas for 8 weeks. Primary efficacy outcome was the change in severity scoring for atopic dermatitis index (SCORAD). Secondary outcomes were the number of patients with minimal clinically detected difference, change in quality of life, daily score of pruritus and sleep need, loss of rescue medication, number of exacerbations, of totally and well-controlled weeks and of adverse events. Microbiological outcomes from five skin regions included changes in number of colony forming units of total staphylococci, Staphylococcus aureus and respective ratio. Analyses were done on an intention-to-treat basis.

RESULTS: Of the 102 patients screened, 78 were included aged 30±13 years (mean ±SD), 61% female, 77% atopic, with AD for 16±10 years. After intervention, patients in chitosan group had a mean relative reduction in SCORAD of 43.8% (95%CI: 30.9 to 55.9), compared with 16.5% (-21.6 to 54.6) in placebo (p = 0.82). Changes in secondary clinical outcomes were similar in both groups. No major imbalances in microbiological profile were observed after the intervention.

CONCLUSIONS: Chitosan coated garments are safe for adolescents and adults with atopic dermatitis and reduce AD severity but with no significant differences from placebo.