EXTRAMMUNE

PMS trial on EXTRAMMUNE, a polyherbal immunity enhancer proves efficacy in the prevention of recurrent upper respiratory tract infections (URTI)

A Phase IV, open label, multi-center study was conducted by 62 general practitioners (GPs) from various cities and towns selecting more than six hundred pediatric patients between 4 -16 years of age suffering from recurrent otitis media and other upper respiratory infections. Extrammune syrup was administered in a dose of 10 ml, twice a day for period of first four weeks and then followed by 5 ml twice a day for next 8 weeks.

580 patients completed the trial; in recurrent otitis media cases 63% patients did not experience a single episode of infection after treatment. Reduction in incidences of rhinitis, pharyngitis, coughs, hoarseness, and associated fever was observed in 68% of the subjects. Necessity of antibiotics course was reduced from 70% to 28% in first three months. The number of patients with absenteeism from school diminished from approximately 42% to 10% during the treatment period.

In patients with recurrent upper respiratory tract infection Extrammune syrup was found to effectively and safely reduce and prevent the episodes of URTI. Thus Extrammune syrup is efficacious immunity enhancer.

EXTRAMMUNE Syrup enhancesthe phagocytosis and chemotaxis by polymorphonuclear (PMN) cells (in vitro study)

Experimental study was conducted by Dr. Nirmala Rege and team at Department of Pharmacology & Therapeutics, Seth GS Medical College & KEM Hospital, Mumbai, to evaluate the effect of Extrammune Syrup on phagocytosis and chemotaxis of the polymorphonuclear cells.

Extrammune syrup (derived at different concentrations), standardized extract of *Tinospora cordifolia* (comparator 400mg) and minimum essential medium (control - MEM) was used to evaluate the effect of Extrammune syrup on phagocytosis and chemotaxis of the polymorphonuclear cells. 24 ml of peripheral venous blood was collected from each normal volunteer in a sterile tube and polymorphonuclear cells were separated.

Chemotaxis and phagocytosis by polymorphonuclear cells was studied by exposing the human polymorphonuclear cells (*in vitro)* to suitable chemotactic factor (Zymosan-A) and organism (*Candida albicans)* respectively.

Extrammune syrup significantly increases the phagocytosis and chemotaxis of the polymorphonuclear cells in a concentration dependent manner. Concentration of 400µg/ml and 800µg/ml exhibited significant increase in both, phagocytic and chemotactic activity, as compared to *Tinospora cordifolia*.