



INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

EVALUATION OF THE CHANGES IN CYTOKINE PROFILE IN IMMUNOTHERAPY TREATED PATIENTS OF VIRAL WARTS

Amrita Sil⁽¹⁾ - Sayantan Bhattacharya⁽²⁾ - Somodyuti Chandra⁽³⁾ - Arini Banerjee⁽³⁾ - Adrija Datta⁽³⁾ - Nilay Das⁽⁴⁾

Rampurhat Government Medical College, Department Of Pharmacology, Rampurhat, India⁽¹⁾ - Nrs Medical College, Department Of Biochemistry, Kolkata, India⁽²⁾ - Medical College, Kolkata, Department Of Dermatology, Kolkata, India⁽³⁾ - Bankura Sammilani Medical College, Department Of Dermatology, Bankura, India⁽⁴⁾

Introduction: Viral wart caused by human papilloma virus is notorious for being contagious, recurrent and recalcitrant. Immunotherapy for wart employs ability of immune system to recognize certain viral, bacterial and fungal antigens in previously sensitized individual inducing type IV delayed-type hypersensitivity reaction (up-regulated Th1 cytokines IL-1, TNF- α , IFN- γ ; down-regulated Th2 cytokines IL-10), not only to injected antigen but also against wart virus.

Objective: To evaluate and compare the pattern of production of Th1 cytokines (IL-1, TNF- α , IFN- γ) and Th2 cytokines (IL-10) in patients receiving immunotherapy with purified-protein-derivative (PPD) or Mycobacterium w (Mw) or mumps-measles-rubella (MMR) vaccine.

Materials and methods: The cohort study conducted on patients receiving immunotherapy with either PPD, Mw, MMR. Investigational product was injected intradermally at baseline, repeated every 2 weeks for 6 doses. 5 ml blood collected for evaluation of cytokines at baseline and 10 weeks of treatment. Blood was centrifuged to separate serum, stored at -80°C. Cytokines were measured by ELISA using standard kit.

Results: 27 participants in PPD group, 33 in Mw group, 36 in MMR group completed the study. IL-10 was significantly downregulated from baseline levels in PPD ($p=0.027$), MMR ($p=0.001$) but not in Mw group ($p=0.123$). IL-1 showed a significant rise from baseline (3.22 ± 1.56) to study end (6.78 ± 4.21) in PPD ($p=0.008$) and near significant in MMR ($p=0.056$) but not significant in the Mw ($p=0.465$). IFN- γ was upregulated in all treatment arms, nearly two fold in the MMR (24.29 to 54.15, $p=0.052$). TNF was downregulated from baseline in all groups. Comparison between the three treatment arms showed no significant changes at end-of-treatment in IL-10 ($p=0.396$), IL-1 ($p=0.830$), IFN- γ ($p=0.408$), TNF ($p=0.281$).





Conclusion: IL-1, TNF- α upregulation and IL-10 downregulation confirms cytokine milieu plays an important role in wart immunotherapy. TNF has no contributory role. PPD and MMR but not Mw holds promise in treatment of warts.

