

Better understanding of the immunosuppressive link between the lymphocytic immune cells and the decreased cell mediated immunity in head and neck cancer patients.

ABSTRACT

The purpose of this study was to determine the phenotyping of Peripheral Blood Lymphocytes (PBL) in Head and Neck Cancers (HNCA) patients and to relate this with the level of Cell-Mediated Immunity (CMI) measured by in vitro lymphoproliferative assay, in order to evaluate immune suppression in HNCA patients and its possible mechanisms. Accordingly, one hundred twenty two HNCA patients and 100 control subjects were enrolled in this study. HNCA patients were classified into 42 nasopharyngeal carcinoma, 66 carcinoma of larynx and 14 Hypo Pharyngeal Carcinoma (HPC). For measuring CMI, Microculture Tetrazolium assay (MTT) was applied on the freshly isolated lymphocytes of HNCA patients and control group. Immunophenotyping of PBL was carried out for monitoring the blood level of CD3+, CD4+, CD8+, CD21+ cells in HNCA patients in comparison with controls. The results of both assays have been integrated, revealed the presence of remarked immune suppression in HNCA patients in comparison with the controls, especially for NasoPharyngeal Carcinoma (NPC) patients who were immunosuppressed more than other studied HNCA types. Surprisingly, NPC group showed the lowest CMI level along with the highest level of PBL subsets, particularly NPC patients expressed the highest level of CD8+ cells among HNCA. It was inferred that CD8+ cells were more likely immune suppressor rather than cytotoxic cells and this is the principal factor for inducing sustained immunosuppression in HNCA and in NPC in particular. Furthermore CD4/CD8 ratio proved to be a reliable index for assessing the immunological status of HNCA patients and more dependable index than other immunity-evaluating factors.

Keyword: Head and neck cancer; Cancer patients; Lymphocytic immune cells; Decreased cell.