PROFILE ANALYSIS OF MYELOID DERIVED SUPRESSOR CELL, CXCR4, AND S100A8 GEN EXPRESSION AS A PREDICTOR FOR NASOPHARYNGEAL CARCINOMA POGRESSION

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ABSTRACT

Nasopharyngeal carcinoma is a malignancy of epithelial lining the nasopharynx. Incidence of NPC in Indonesia is 6.2/100.000 or 12.000 new cases per year. Nasopharyngeal carcinoma is radiosensitive, but the patients usually came for late stage that has been further indicating progression of the tumor. There is the role of MDSC in the process of tumors growth. Most significantly, MDSC are increased in cancer patients and contribute to the immunosuppression. Migration and activation of MDSC are influenced by several factors such as CXCL12 binding to CXCR4 receptor and pro-inflammatory such as S100A8. The aim of this study for analyzes of CD14 and CD15 for MDSC profile, and expression of gene CXCR4 and S100A8 as a predictor for progressivity of NPC.

Peripheral blood specimen and biopsy from primary tumor were collected from 16 nasopharyngeal carcinoma patients. The samples were divided into groups of early and late stages. The samples collected undergone qRT-PCR and data analyzed by $2^{-\Delta\Delta Ct}$ *methods. Statistical analyses were using Shapiro Wilk test and Spearman correlation analysis.*

There were significantly differences between early and late stage in CD14 and CD15 gene expression as a marker for MDSC and S100A8 gene in blood. There were significant correlations between the MDSC (p=0.000), CXCR4 gene expression (p=0.032), and S100A8 (p=0.000) in the blood to stage. No correlation was found between early and late stage in all of the genes for NPC tumor tissue samples. MDSC correlated with age (p=0.002), T (p=0.003) and N classification (p=0.006), while CXCR4 correlated with T (p=0.039) and N classification (p=0.009), and S100A8 correlated with age (p=0.041) and T classification (p=0.022). Based on multivariate analysis found that MDSC can be used as predictors of progression of NPC.

Increased MDSC encoded by of CD14 and CD15 gene expression, CXCR4 and S100A8 gene expression in the blood comparable with nasopharyngeal carcinoma progression. We concluded that MDSC could be used as a predictor progression of NPC.

Keywords: CD14, CD15, Myeloid derived suppresor cell, CXCR4, S100A8, Nasopharyngeal Carcinoma