

ABSTRAK

PERBEDAAN EKSPRESI GEN *MATRIX METALLOPROTEINASE-1 (MMP1)* PADA *LOW GRADE* DAN *HIGH GRADE ORAL SQUAMOUS CELL* *CARCINOMA*

(Studi pada Pasien Laboratorium Patologi Anatomi RSUD Prof. Dr.
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Oral squamous cell carcinoma (OSCC) merupakan keganasan epitel rongga mulut dengan kategori tingkat diferensiasi *low* dan *high grade*. MMP1 diketahui berperan pada proses invasi, metastasis dan ekspresinya meningkat selama progresi kanker. Namun, belum diketahui perubahan ekspresi mRNA MMP1 pada *low grade* dan *high grade* pada OSCC. Penelitian ini bertujuan untuk mengetahui perubahan ekspresi mRNA MMP1 pada *low* dan *high grade* pasien OSCC. Penelitian observasional analitik dengan rancangan *cross sectional* menggunakan jaringan FFPE sebanyak 18 sampel OSCC. Sampel FFPE dilakukan ekstraksi RNA dan diubah menjadi bentuk cDNA kemudian kuantifikasi ekspresi mRNA MMP1 menggunakan qPCR. Analisis statistik relatif ekspresi menggunakan *software* GenEX MultiD untuk mengetahui perbedaan ekspresi *low* dan *high grade* dengan uji *independent t-test*. Nilai $\Delta\Delta Ct$ kelompok *low grade* $7,28\pm 3,36$ dan kelompok *high grade* $10,92\pm 1,46$. Hasil analisis statistik menunjukkan perubahan ekspresi mRNA MMP1 dengan *fold change* 12,5 ($p < 0,05$) pada *high* dibandingkan *low grade*. Kesimpulan dari penelitian ini, terdapat perubahan peningkatan ekspresi pada mRNA MMP1 pada *high* dibandingkan *low grade*.

Kata kunci: *Oral squamous cell carcinoma (OSCC)*, MMP1, *low grade*, *high grade*.

ABSTRACT

DIFFERENCES OF MATRIX METALLOPROTEINASE-1 (MMP1) GEN EXPRESSION IN LOW GRADE AND HIGH GRADE ORAL SQUAMOUS CELL CARCINOMA

(Study on Patients at the Anatomical Pathology Laboratory of Prof. Dr. Margono Soekarjo Purwokerto Hospital)

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Oral squamous cell carcinoma (OSCC) is an oral epithelial malignancy with low and high grade differentiation categories. MMP1 is known to play role in the process of invasion, metastasis and its expression increases during cancer progression. However, there is no known change in MMP1 mRNA expression in low grade and high grade in OSCC. This study aims to determine changes in MMP1 mRNA expression in low and high grade OSCC patients. An analytical observational study with a cross sectional design using FFPE network as many as 18 samples of OSCC. FFPE samples were extracted with RNA and converted into cDNA form and then quantified MMP1 mRNA expression using qPCR. Statistical analysis of relative expression used GenEX MultiD software to determine the difference between low and high grade expressions using an independent t-test. The value of $\Delta\Delta Ct$ for the low grade group was 7.28 ± 3.36 and the high grade group was 10.92 ± 1.46 . The results of statistical analysis showed a change in MMP1 mRNA expression with a fold change of 12.5 ($p < 0.05$) at high compared to low grade. The conclusion of this study, there is a change in the increase in the expression of MMP1 mRNA at high compared to low grade.

Keyword: *Oral squamous cell carcinoma (OSCC), MMP1, low grade, high grade.*