

INTISARI

Latar belakang : Karsinoma nasofaring memiliki angka kesakitan dan kematian yang besar di Indonesia. Sulitnya deteksi karsinoma ini karena memerlukan tindakan yang relatif invasif dan kompleks. Saliva merupakan salah satu cairan tubuh yang mengandung materi genetik, seperti RNA yang dapat digunakan untuk deteksi karsinoma. Saliva memiliki potensi untuk deteksi karsinoma secara noninvasif dan sederhana. PTEN dan EBER yang terdapat pada saliva memiliki potensi untuk deteksi karsinoma nasofaring.

Tujuan : Mengetahui ekspresi mRNA PTEN dan EBER pada saliva karsinoma nasofaring dibandingkan dengan ekspresi mRNA PTEN dan EBER pada saliva karsinoma sel skuamosa kepala leher dan individu normal sebagai kontrol.

Metode : Penelitian ini merupakan penelitian observasional analitik uji potong lintang di RSUP Dr. Sarjito dan Rumah Sakit Akademik Universitas Gadjah Mada, pada pasien karsinoma nasofaring, karsinoma sel skuamosa kepala leher, dan individu normal. Pemeriksaan ekspresi mRNA PTEN dan EBER dilakukan dengan qPCR. Analisis dilakukan dengan uji bivariat dan multivariat.

Hasil : Subyek penelitian sebanyak 105 pasien. Pada karsinoma nasofaring nilai rata-rata Δ CT PTEN sebesar $5,37 \pm 0,89$. Pada kontrol, nilai rata-rata Δ CT sebesar $4,17 \pm 1,13$. Terdapat perbedaan bermakna ekspresi PTEN dengan nilai $p=0,001$ ($p < 0,005$, CI 95 %). Ekspresi relatif PTEN pada kontrol 1,89 kali lebih tinggi dibanding karsinoma nasofaring. Pada karsinoma kepala leher nilai median Δ CT sebesar 5,03 (3,27-7,38). Terdapat perbedaan bermakna ekspresi PTEN karsinoma kepala leher dibanding kontrol dengan nilai $p=0,004$ ($p < 0,005$, CI 95 %). Ekspresi relatif gen PTEN pada kontrol 1,61 kali lebih tinggi dibanding karsinoma kepala leher. Tidak terdapat perbedaan bermakna ekspresi PTEN pada karsinoma nasofaring dan karsinoma kepala leher, dengan nilai $p=0,108$. Pada karsinoma nasofaring nilai rata-rata Δ CT EBER sebesar $4,4 \pm 1,83$. Pada kontrol, nilai rata-rata Δ CT sebesar $6,02 \pm 2,69$. Terdapat perbedaan bermakna ekspresi EBER karsinoma nasofaring dibanding kontrol dengan nilai $p=0,004$ ($p < 0,005$, CI 95 %). Ekspresi relatif EBER karsinoma nasofaring pada 7,63 kali lebih tinggi dibanding kontrol. Pada karsinoma kepala leher nilai median Δ CT sebesar $4,96 \pm 2,33$. Tidak terdapat perbedaan bermakna ekspresi EBER karsinoma kepala leher dibanding kontrol dengan nilai $p=0,082$ ($p > 0,005$, CI 95 %). Terdapat perbedaan bermakna ekspresi EBER pada karsinoma nasofaring dan karsinoma kepala leher, dengan nilai $p=0,004$.

Kesimpulan : Ekspresi PTEN pada saliva penderita karsinoma nasofaring lebih rendah secara bermakna dibanding kontrol. Ekspresi EBER pada saliva penderita karsinoma nasofaring lebih tinggi secara bermakna dibanding karsinoma kepala leher dan kontrol.

Kata Kunci : Karsinoma nasofaring, karsinoma sel skuamosa kepala leher, saliva, mRNA PTEN, EBER, deteksi

ABSTRACT

Background : *Nasopharyngeal carcinoma have high rates of incidence and mortality in Indonesia. The difficulty in detecting these carcinomas is due to the need for relatively invasive and complex procedures. Saliva is one of the body fluids containing genetic material, such as RNA, which can be utilized for carcinoma detection. Saliva has the potential for noninvasive and simple carcinoma detection. PTEN and EBER present in saliva hold promise for the detection of nasopharyngeal carcinoma and squamous cell carcinoma of the head and neck.*

Objective : *Understanding the mRNA expression of PTEN and EBER in the saliva of patients with nasopharyngeal carcinoma compared with expression of mRNA PTEN and EBER in the saliva squamous cell carcinoma of the head and neck patients and normal individuals as a controls.*

Methods : *This study is an analytical cross-sectional observational research conducted at the Dr. Sarjito General Hospital and Academic Hospital of Gadjah Mada University in Yogyakarta, focusing on patients with nasopharyngeal carcinoma, squamous cell carcinoma of the head and neck, and normal individuals undergoing health examinations. The expression of mRNA PTEN and EBER was examined using qPCR. The analysis was conducted using both bivariate and multivariate tests.*

Result : *The study involved 105 patients. In nasopharyngeal carcinoma, the mean ΔCT value of PTEN was 5.37 ± 0.89 , while in the control group, the mean ΔCT was 4.17 ± 1.13 . There was a statistically significant difference in PTEN expression, with a p-value of 0.001 ($p < 0.005$, 95% CI). The relative expression of PTEN in the control group was 1.89 times higher than in nasopharyngeal carcinoma. In head and neck carcinoma, the median ΔCT value was 5.03 (3.27–7.38). A significant difference in PTEN expression was observed between head and neck carcinoma and the control group, with p-value of 0.004 ($p < 0.005$, 95% CI). The relative PTEN gene expression in the control group was 1.61 times higher than in head and neck carcinoma. No significant difference in PTEN expression was found between nasopharyngeal carcinoma and head and neck carcinoma ($p = 0.108$). In nasopharyngeal carcinoma, the mean ΔCT value of EBER was 4.4 ± 1.83 , while in the control group, the mean ΔCT was 6.02 ± 2.69 . A significant difference in EBER expression was observed between nasopharyngeal carcinoma and the control group ($p = 0.004$, $p < 0.005$, 95% CI), with relative EBER expression in nasopharyngeal carcinoma being 7.63 times higher than in the control group. In head and neck carcinoma, the mean ΔCT value was 4.96 ± 2.33 . No significant difference in EBER expression was observed between head and neck carcinoma and the control group ($p = 0.082$, $p > 0.005$, 95% CI). Significant difference in EBER expression was found between nasopharyngeal carcinoma and head and neck carcinoma ($p = 0.004$).*

Conclusion : *The expression of PTEN in the saliva of patients with nasopharyngeal carcinoma was significantly lower compared to the control group. Expression of EBER in the saliva of patients with nasopharyngeal carcinoma was significantly higher compared to both head and neck carcinoma and the control group.*

Keywords : *Nasopharyngeal carcinoma, head and neck squamous cell carcinoma, saliva, mRNA PTEN, EBER, detection*