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EKSPRESI mRNA PD-L1 SEBAGAI PENANDA HAYATI PADA RETINOBLASTOMA STADIUM KLINIS INTRAOKULAR DAN INVASI LOKAL
ADHYATMA, Prof. Dr. dr. Agus Supartoto, Sp. M(K).; dr. Indra Tri Mahayana, Sp.M, PhD, dr. Hanggoro Tri Rinonce,
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ABSTRAK

Ekspresi mRNA PD-L1 Sebagai Penanda Hayati Pada Retinoblastoma Stadium Intraokular dan Invasi Lokal

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Tujuan: Penelitian ini bertujuan untuk membandingkan ekspresi mRNA indeks biomarker PD-L1 pada stadium intraocular dan invasi lokal retinoblastoma.
Metode: Desain penelitian ini adalah potong lintang dengan jumlah sampel 31 pasien retinoblastoma yang diklasifikasikan menjadi dua kelompok, yaitu kelompok retinoblastoma stadium intraokular dan kelompok retinoblastoma stadium lokal. Subjek penelitian adalah pasien retinoblastoma yang dirawat di RSUP Dr. Sardjito Yogyakarta, Indonesia, antara Januari 2015 hingga Desember 2020. Pasien menjalani prosedur enukleasi jaringan mata dan analisis jaringan yang dilakukan oleh ahli patologi anatomi untuk menegakkan diagnosis retinoblastoma. Jaringan tumor dikemas dalam blok parafin, melalui pemrosesan jaringan dan ekspresi mRNA PD-L1 yang dianalisis menggunakan qRT-PCR .
Hasil: Sampel diklasifikasikan menjadi retinoblastoma stadium intraokular (n=10) dan invasi lokal (n=21). Pada analisis uji statistik didapatkan median PD-L1 adalah 13,93 dimana jika ekspresi PD-L1 melebihi median disebut *upregulate* dan ekspresi PD-L1 lebih rendah dari median disebut *downregulate*. Dari data tersebut ditemukan bahwa 42,9% kasus stadium invasi lokal dan 30% kasus stadium intraokular mengalami *upregulation*, dimana 57,1% kasus invasi lokal dan 70% kasus intraokular mengalami *downregulation.* Ekspresi mRNA PD-L1 mengalami tren peningkatan positif terhadap invasi retinoblastoma, namun secara statistik dengan analisis *Fisher Exact Test* menunjukkan hasil yang tidak signifikan, yaitu p=0,697 (p>0,05). Tidak ada perbedaan signifikan ekspresi mRNA PD-L1 berdasarkan usia, jenis kelamin, lateralitas, ukuran tumor, derajat diferensiasi, dan riwayat kemoterapi (p>0,05).
Kesimpulan: Tidak terdapat perbedaan ekspresi mRNA PD-L1 pada retinoblastoma stadium invasi lokal dan intraokular. Retinoblastoma stadium intraokular mengekspresikan rerata mRNA PD-L1 yang lebih tinggi dibandingkan dengan retinoblastoma stadium invasi lokal meskipun secara statistik tidak berbeda signifikan.
Kata kunci: retinoblastoma, PD-L1, qRT-PCR, invasi lokal, intraokular.

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ABSTRACT

The mRNA Expression of PD-L1 as a Biomarker in Intraocular and Local Invasion Stages of Retinoblastoma

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Objective: This study was aimed to compare the mRNA expression of PD-L1 biomarker index in intraocular and local invasion stages of retinoblastoma.
Methods: The design of this study was cross-sectional with a total sample of 31 retinoblastoma patients. They were classified into two groups, namely the intraocular stage retinoblastoma group and the local stage retinoblastoma group. The subjects were patients with retinoblastoma treated in Dr. Sardjito General Hospital in Yogyakarta, Indonesia, between January 2015 and December 2020. The patients had eye tissue enucleation procedures and tissue analysis conducted by the pathologists to establish retinoblastoma diagnosis. The tumor tissue was embedded in the paraffin block, went through tissue processing and PD-L1 mRNA expression
levels were analyzed using real time PCR.
Results: The samples were classified as intraocular stage retinoblastoma (n=10) and local invasion (n=21). In the statistical test, the median of PD-L1 was 13.93 where if the expression of PD-L1 exceeds the median it is called upregulate and PD-L1 expression is less than the median is called downregulate. From the data, it was found that 42.9% of cases of local invasion stage and 30% of cases of intraocular stage were upregulated, of which 57.1% cases of local invasion and 70% of intraocular cases were downregulated. PD-L1 mRNA expression experienced a positive upward trend towards retinoblastoma invasion, but statistically with Fisher Exact Test analysis showed insignificant results, namely $p=0.697$ ($p>0.05$). There was no significant difference in the mRNA expression of PD-L1 based on age, gender, laterality, tumor size, degree of differentiation, and history of chemotherapy ($p>0.05$).
Conclusion: This study found no difference in the mRNA expression of PD-L1 between local and intraocular invasion stages of retinoblastoma. The intraocular group had a higher mean expression PD-L1 than the local invasion group, which was not statistically significant.
Keywords: retinoblastoma, PD-L1, qRT-PCR, local invasion, intraocular.