

## ABSTRACT

### **Association between Expression of CD47 and Expression of Neurofibromatosis 2 (NF2) in Orbitocranial Meningioma**

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#### **Background**

Orbitocranial Meningioma is the most common benign tumor in adults. Although it considered as slow growth tumor, there was 3% malignant variant (high grade) that has high recurrence rates in 5 years. Immunotherapy has emerged as alternative therapy for meningioma. Most common genetic alteration in meningioma is NF2 mutation. Several immune checkpoint that have rule in tumor growth such as PD-L1, CTLA4 and TIM-3 has been found in meningioma and already in trial for immunotherapy. The role of immune checkpoint CD47 and its relationship with NF2 expression is not well understood.

#### **Method**

This study is a cross-sectional study at Sardjito General Hospital Yogyakarta. CD47 and NF2 expression in paraffin block of meningioma were examined by immunohistochemistry method and analyzed with Chi square using SPSS.

#### **Results**

154 subjects were included in this study. Positive and high CD47 expression were presented in 37% and 3.9% subjects respectively. Negative NF2 was presented in 22.7% subjects and is not significantly associated with CD47 expression.

#### **Conclusion**

CD47 was expressed in all degree of meningioma and is not associated with NF2 expression

**Keywords:** meningioma, CD47, NF2, immune checkpoint

## INTISARI

### **Hubungan antara Ekspresi CD47 dengan Ekspresi Neurofibromatosis tipe 2 (NF2) pada Meningioma Orbitokranial**

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#### **Latar Belakang**

Meningioma orbitokranial merupakan tumor jinak intrakranial tersering pada usia dewasa. Walaupun meningioma berkembang lambat, terdapat 3% varian meningioma derajat tinggi yang memiliki rekurensi tinggi dalam 5 tahun sehingga imunoterapi diharapkan dapat menjadi terapi baru untuk meningioma orbitokranial. Mutasi genetik yang paling sering terjadi adalah mutasi NF2. Mekanisme pertumbuhan tumor dengan immune check point seperti PD-L1, CTLA-4, TIM-3 telah ditemukan pada meningioma dan dapat menjadi target imunoterapi. Namun belum ada studi lebih lanjut mengenai interaksi *immune checkpoint* protein CD47 dan hubungannya dengan ekspresi NF2.

#### **Metode**

Penelitian ini menggunakan metode observasional analitik dengan rancangan potong lintang di RSUP Dr. Sardjito Yogyakarta. Sampel penelitian menggunakan blok paraffin jaringan meningioma dan dilakukan pengecatan imunohistokimia untuk melihat ekspresi protein CD47 dan NF2. Kemudian dilanjutkan analisis statistik *chi square* menggunakan SPSS.

#### **Hasil**

Didapatkan 154 jaringan histopatologi meningioma orbitokranial sebagai subjek penelitian. Ekspresi CD47 terpulas positif pada 37% subjek dan tereskpresi tinggi pada 3.9% subjek. Ekspresi NF2 terpulas negatif pada 22.7% subjek. Tidak didapatkan hubungan yang signifikan secara statistik antara ekspresi CD47 dan ekspresi NF2 ( $p = 0.527$ )

#### **Kesimpulan**

Seluruh derajat meningioma orbitokranial mengekspresikan CD47 dan ekspresi tersebut tidak berhubungan dengan ekspresi NF2 pada penderita meningioma orbitokranial

**Kata Kunci :** *meningioma, CD47, NF2, immune checkpoint*