

# Korelasi Jumlah Trombosit dan Immature Platelet Fraction dengan Fungsi Agregasi Trombosit Pada Pasien Trombositopenia = Correlation between Platelet Count and Immature Platelet Fraction with Platelet Aggregation Function in Patient with Trombocytopenia

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## Abstrak

Latar Belakang: Risiko perdarahan tidak berkorelasi linear dengan jumlah trombosit pada kondisi trombositopenia. Terdapat perbedaan fungsi trombosit pada trombositopenia gangguan produksi dengan destruksi perifer. Pada trombositopenia, hasil fungsi agregasi trombosit dengan light transmission aggregometry tidak valid. Diperlukan pemeriksaan fungsi trombosit yang dapat dikerjakan pada kondisi trombositopenia.

Tujuan: Mengkaji fungsi agregasi trombosit pada pasien trombositopenia

Metode: Studi potong lintang terhadap 60 pasien trombositopenia gangguan produksi dan destruksi perifer di Rumah Sakit Cipto Mangunkusumo selama Desember 2023 sampai April 2024. Dilakukan pemeriksaan jumlah trombosit, IPF, dan fungsi agregasi trombosit.

Hasil: Terdapat perbedaan fungsi agregasi antara trombositopenia gangguan produksi dengan destruksi perifer (40% vs 77,7%). Didapatkan perbedaan nilai IPF antara trombositopenia gangguan produksi dengan destruksi perifer (5,65% vs 21%). Tidak didapatkan korelasi antara jumlah trombosit dengan fungsi agregasi trombosit pada trombositopenia gangguan produksi maupun destruksi perifer ( $r=0,214$ ,  $p=0,231$ ;  $r=0,364$   $p=0,062$ ). Tidak didapatkan korelasi antara jumlah trombosit dengan fungsi agregasi trombosit pada trombositopenia gangguan produksi maupun destruksi perifer. Didapatkan titik potong IPF 10,25% untuk membedakan trombositopenia gangguan produksi dan destruksi perifer dengan sensitivitas 80,8% dan spesifisitas 68%.

Kesimpulan: Fungsi agregasi trombosit pada trombositopenia destruksi perifer lebih baik daripada trombositopenia gangguan produksi. Fungsi agregasi trombosit tidak berkorelasi dengan jumlah trombosit maupun dengan IPF.

.....Background: The risk of bleeding does not linearly correlate with platelet count in thrombocytopenia. There is difference between platelet function in central and peripheral thrombocytopenia. Platelet aggregation function assay performed by light transmission aggregometry is not valid in thrombocytopenia. Platelet aggregation assay that can be performed in thrombocytopenia is needed.

Objective: To assess platelet function in thrombocytopenia patients.

Methods: A cross-sectional study was conducted on 60 thrombocytopenic patients at Cipto Mangunkusumo Hospital from December 2023 to April 2024. Platelet count and immature platelet fraction (IPF) were done by automatic blood cell counter while platelet aggregation by Plateletworks ADP Kit

Results: There was a difference in platelet aggregation function between central thrombocytopenia and peripheral thrombocytopenia (40% vs 77.7%). A difference in IPF values was found between central thrombocytopenia and peripheral thrombocytopenia (5.65% vs. 21%). No correlation between platelet count and platelet aggregation function in thrombocytopenia ( $r=0.214$ ,  $p=0.231$  vs.  $r=0.364$ ,  $p=0.062$ ). No correlation was found between IPF and platelet aggregation function ( $r=-0.139$ ,  $p=0.498$  vs.  $r=-0.282$ ,

p=0.171). The cut-off value of IPF was 10.25% to distinguish central and peripheral thrombocytopenia. Conclusion: Platelet aggregation function in peripheral thrombocytopenia was better than central thrombocytopenia. Platelet aggregation function did not correlate neither platelet count nor IPF.