

# Hubungan antara ekspresi miRNA-26a platelet, reaktivitas platelet, dan TIMI flow pada pasien infark miokard akut disertai elevasi segmen ST yang menjalani intervensi koroner perkutan primer = Association between miRNA-26a platelet, platelet reactivity, and TIMI-flow of patients with Acute ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention

Geis Alaztha, author

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## Abstrak

Latar belakang: micro-RNA saat ini telah diketahui berperan dalam patofisiologi berbagai penyakit termasuk di bidang kardiovaskular. miR-26a platelet dikaitkan dengan aktifitas platelet tinggi. Resistensi klopido­grel telah diketahui memiliki prevalensi yang cukup tinggi di populasi Asia, yang mana dapat mempengaruhi mortalitas serta kejadian kardiovaskular mayor. Hubungan antara ekspresi miR-26a platelet dengan resistensi klopido­grel begitu pula dengan TIMI flow pasca IKPP pada IMA-EST di populasi Asia, belum pernah dilaporkan.

Tujuan: Penelitian ini bertujuan untuk mengetahui hubungan antara ekspresi miR-26a platelet terhadap reaktivitas platelet dan perfusi miokardium pasca IKPP.

Metode: Pada pasien IMA-EST yang menjalani IKPP dan mendapatkan terapi dosis loading klopido­grel 600 mg, dimasukkan kedalam populasi penelitian. Kami mengukur reaktivitas platelet dengan menggunakan VerifyNow P2Y12, aktifitas platelet tinggi didefinisikan jika memiliki nilai > 208 PRU. Metode RealtimePCR Taqman dilakukan untuk analisa ekspresi miR-26a platelet. Ekspresi miR-26a platelet dan reaktivitas platelet dikorelasikan dengan TIMI flow pasca IKPP pada pasien IMA-EST.

Hasil: Terdapat 100 subyek yang direkrut pada studi ini. Diantaranya, 59% menunjukkan peningkatan ekspresi miR-26a. Reaktivitas platelet meningkat pada 27 % pasien studi ini dikategorikan non-responder terhadap klopido­grel. Terdapat hubungan antara ekspresi dengan penurunan fungsi penghambatan platelet (OR 4.2, p = 0.006). Indeks reaktivitas platelet >208 PRU meningkatkan risiko TIMI flow < 3 (OR 3.3, p= 0.015). Tidak terdapat hubungan langsung antara ekspresi miR-26a platelet dan TIMI flow < 3.

Kesimpulan: Pasien dengan peningkatan ekspresi miR-26a platelet memiliki risiko untuk mengalami menjadi non-responder klopido­grel. Tidak terdapat hubungan langsung antara ekspresi miR-26a platelet dan TIMI flow pasca IKPP.

.....Background: micro-RNA has now been known to play a role in the pathophysiology of various diseases including cardiovascular disease. Clopidogrel resistance has been known prevalent in Asian population, that may affect mortality and major cardiovascular events. The relationship between the expression of platelet miR-26a and clopidogrel resistance as well as TIMI flow post primary PCI in STEMI among Asian populations, has never been done.

Objective: the aim of this study is to define whether miR-26a platelet expression has a relation with platelet reactivity and myocardial perfusion after primary PCI.

Methods: STEMI patients who underwent primary PCI and has received 600 mg loading dose of clopidogrel were recruited for the study. We measured platelet reactivity by VerifyNow P2Y12, high platelet reactivity was defined as > 208 PRU. Realtime PCR by taqman method were performed to asses the expression of

miR-26a platelet. miRNA-26a platelet expression and platelet reactivity were correlated with TIMI flow post primary PCI in STEMI.

Hasil: there were 100 patients recruited for this study. among them, 59% of patients with high expression of miR-26a platelet. Platelet reactivity showed 27% of the patients were clopidogrel non-responders. There was a relationship between high miR-26a expression and decreased function of platelet inhibition (OR 4.2, p = 0.006). Platelet reactivity index > 208 increased the risk of suboptimal reperfusion (OR 3.3, p = 0.015).

There was no direct correlation between miR-26a expression and TIMI flow < 3.

Conclusion: Patients with high miR-26a platelet expression had increased risk of being clopidogrel non responders. There is no direct relationship between miR-26a platelet expression and TIMI flow after primary PCI.