

Pengaruh status lipid donor trombosit aferesis terhadap agregasi trombosit dan kadar malondialdehid selama penyimpanan = Effect of lipid status platelet apheresis donor to platelet aggregation and levels of malondialdehyde with in storage / Yanto Ciputra

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Abstrak

[ABSTRAK

Latar belakang. Transfusi trombosit ditujukan untuk mencegah dan mengatasi perdarahan pada pasien trombositopenia. Trombosit dapat mengalami aktivasi walaupun tidak terjadi perdarahan sehingga dapat menimbulkan suatu keadaan yang disebut hiperagregasi seperti pada trombosit dari seseorang dengan hiperlipidemia. AABB menganjurkan untuk membuang semua produk darah yang berasal dari donor dengan plasma yang lipemia.

Penelitian ini bertujuan untuk mengetahui pengaruh status lipid donor trombosit aferesis terhadap fungsi trombosit dan kadar malondialdehid selama penyimpanan.

Metodologi. Penelitian ini menggunakan desain deskriptif analitik pada 31 sediaan trombosit aferesis yang berasal dari donor trombosit aferesis yang memenuhi kriteria inklusi dan eksklusi. Sediaan trombosit aferesis dibagi menjadi dua grup, yaitu grup hiperlipidemia dan normolipidemia. Dilakukan pengujian terhadap kandungan trombosit, fungsi agregasi dan kadar MDA pada hari pertama, kedua dan keempat penyimpanan.

Hasil. Terjadi peningkatan kandungan trombosit selama penyimpanan pada kedua grup, yang berhubungan dengan proses apoptosis. Pada hari keempat terjadi kenaikan kandungan trombosit yang lebih banyak pada grup hiperlipidemia. Pada hari kedua didapatkan perbedaan yang bermakna pada agregasi trombosit dengan agonis ADP 2 μM. Pada hari keempat didapatkan perbedaan kadar MDA yang bermakna. Didapatkan korelasi yang positif dan bermakna antara kolesterol total, LDL dan trigliserida terhadap kadar MDA. Tidak didapatkan korelasi yang bermakna antara kolesterol total, trigliserida dan kadar MDA terhadap agregasi trombosit.

Simpulan. Status lipid donor meningkatkan terjadinya apoptosis trombosit aferesis, lebih sensitif terhadap agonis ADP dan peningkatan kadar MDA. Perlunya mengingatkan donor trombosit aferesis untuk diet rendah lemak sebelum proses aferesis dilaksanakan. Perlunya penelitian lebih lanjut untuk menentukan kadar lipid yang masih dapat ditoleransi.

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ABSTRACT

Background. Platelet transfusions is intended to prevent and resolve bleeding in patients with thrombocytopenia. Platelet activation may have occurred although there were no bleeding that can lead to a condition called hyperaggregation as in someone with hyperlipidemia. AABB recommends to dispose of all products from donors with plasma lipemia. This study aimed to determine the effect of lipid status of the donor platelet apheresis to platelet function and levels of malondialdehyde with in storage.

Methodology. This study used descriptive analytic design in 31 platelet apheresis concentrates. Samples were divided into two groups, hyperlipidemia and normolipidemia. The assay for the content of platelets, aggregation functions and levels of MDA was tested on the first day, second and fourth of platelet storage.

Results. An increase in the content of platelets during storage in both groups, which are associated with the process of apoptosis. On the fourth day there was higher of contents platelets in hyperlipidemic grup than normolipidemic grup. There were significant difference in platelet aggregation with ADP 2 μM at second day and levels of MDA at fourth day. There were positive and significant correlations between total cholesterol, LDL and triglyceride to the levels of MDA. There were no significant correlation between total cholesterol, triglycerides and MDA levels to platelet aggregation.

Conclusion. Improved of the lipid status of the donor platelet apheresis will increase platelet apoptosis, more sensitive to agonist ADP and increase MDA levels. The need to remind donors platelet apheresis to a low fat dietary before apheresis process implemented. Need for further research to determine the lipid levels that can still be tolerated., **Background.** Platelet transfusions is intended to prevent and resolve bleeding in patients with thrombocytopenia. Platelet activation may have occured although there were no bleeding that can lead to a condition called hyperaggregation as in someone with hyperlipidemia. AABB recommends to dispose of all products from donors with plasma lipemia. This study aimed to determine the effect of lipid status of the donor platelet apheresis to platelet function and levels of malondialdehyde with in storage.

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