

Analisis fragilitas eritrosit dan kadar kalium pada produk sel darah merah pekat pasca radiasi dengan berbagai dosis radiasi = Analysis of erythrocyte fragility and potassium levels in red blood cells concentrated product after irradiation with various doses of irradiation

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Abstrak

[ABSTRAK

Latar belakang : Salah satu reaksi transfusi lambat yang bersifat fatal adalah TA GVHD (Transfusion Associated Graft Versus Host Disease). Kejadian TA GVHD pada pasien immunocompromised diperkirakan sebesar 0,1- 1,0% dengan angka kematian sekitar 80- 90%.⁷ Upaya radiasi komponen darah seluler saat ini merupakan cara yang paling efisien dan dapat diandalkan untuk mencegah TA-GVHD.

Penelitian ini bertujuan untuk mengetahui pengaruh efek berbagai dosis radiasi terhadap sel darah merah selama penyimpanan. Metodologi : Penelitian ini menggunakan desain deskriptif analitik pada 72 sediaan sel darah merah yang memenuhi kriteria inklusi dan eksklusi. Sediaan sel darah merah dibagi menjadi 4 grup, yaitu grup yang mendapat dosis 2500,3000,5000 cGy dan kontrol. Dilakukan pengujian OFT dan kadar kalium pada hari pertama, ketiga dan kelima penyimpanan.

Hasil : Terjadi peningkatan kadar kalium yang bermakna secara statistik mulai dari hari pertama setelah dilakukan radiasi pada semua dosis. Tidak ditemukan perbedaan bermakna ketahanan membran sel darah merah terhadap semua dosis radiasi selama penyimpanan sampai hari kelima.

Simpulan : Radiasi pada dosis 2500-5000 cGy dapat menyebabkan peningkatan kadarkalium dan tidak menyebabkan perubahan fragilitas sel darah merah yang disimpan selama 5 hari setelah radiasi. Perlunya penelitian lebih lanjut mengenai mutu sediaan sel darah merah selama penyimpanan setelah dilakukan radiasi seperti melihat tingkat hemolisis (hemolisis rate).

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ABSTRACT

Background: One of the delayed transfusion reactions that are fatal is TA GVHD (Transfusion Associated Graft Versus Host Disease). TA incidence of GVHD in immunocompromised patients is estimated at 0.1 to 1.0% with a mortality rate of approximately 80-90% .⁷ Efforts irradiation of cellular blood components is currently the most efficient way and a reliable way to prevent TA-GVHD. This study aims to determine the effect of various doses of irradiation effects on red blood cells during storage.

Method: This study used a descriptive analytic design at 72 red blood cell preparations that meet the inclusion and exclusion criteria. The preparation of red blood cells were divided into 4 groups, ie the group that received 2500,3000,5000 cGy dose and control. OFT testing and potassium levels on the first day, the third and fifth storage.

Results: An increase in potassium levels was statistically significant from the first day after irradiation at all doses. Found no significant differences in red blood cell membrane resistance to all doses of irradiation during storage until the fifth day. Conclusion: Irradiation at doses of 2500-5000 cGy can cause increased pottasium level and does not cause changes fragility of red blood cells stored for 5 days after irradiation. The need for further research on the quality of the preparation of red blood cells during storage after irradiation

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