Zh Bibekov et al., J Nurs Care 2016, 5:8(Suppl)
http://dx.doi.org/10.4172/2167-1168.C1.032

The safe and effective plateletpheresis

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At the Republic Research Center of Transfusion, platelet production is mainly supported (about 99%) by apheresis. However, apheresis donations have limitations caused by donor eligibility due to both donor preferences and donor platelet count validity. So, it is important to maintain single donor high-dose plateletpheresis by improving its efficacy and safety. The aim of study was to develop safe-effective approaches of plateletpheresis. Donors had been attracted to the study if they had filed of informed consent for post-collection blood sampling in advance. They were selected with following criteria: age 18-60 years, weight ≥50 kg, Hb≥125 g/L and PLTs≥150×10^9/L. Target number of platelets need to be harvested was chosen under calculation of estimated donor post-collection of platelets. Platelets were harvested by Haemonetics MCS plus separators with LDP protocol, blood samples were counted by Sysmex haemanalyzer hematology analyzer. Thus, 16 apheresis procedures with volunteer-donors were studied. The following results are demonstrated in the present study: donor pre-collection platelets 286.0x10^9/L±27.2; donor blood volume calculated by separator 5481.6 mL±408.5; platelet yield 473.1x10^9/unit±47.7; donor blood processed 3190.8 mL±189.7; donor platelets processed 763.0x10^9±55.6; actual donor post-collection platelets measured by lab 193.3x10^9/L±18.6; platelet collection efficacy 61.9%±3.0. The values of estimated post-collection platelets 199.0x10^9/L±21.3 were not significantly different from those with actual post-collection platelets 193.3x10^9/L±18.6 (χ^2 =0,401). Thus, plateletpheresis efficacy has to be controlled using calculation of estimated donor post-collection platelets by making sure that safe threshold of post-apheresis platelet number is provided.

Biography

Zh Bibekov has graduated from the Karaganda Medical University, Kazakhstan in 1995. Thereafter, he has practiced as an Anesthesiologist at the Obstetric Hospital over 13 years. He is the Head of Donor Blood Collection department at the Republic Research Center of Transfusion, Astana, Kazakhstan. He is continuing his researches in Blood Service field at the Pirogov National Surgical Research Center, Moscow, Russia. He has published papers in reputed Russian journals.

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