

C15. **ROLE OF CENTRIFUGATION PARAMETERS ON PLATELETS CONCENTRATES QUALITY.**

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Objective: the quality of platelet concentrates plays an important role in the effectiveness of transfusion therapy. As a result, this study aims at assessing the quality of platelet concentrates derived from platelets rich plasma. They were monitored the following quality parameters of blood components: volume, number of platelets, number of WBC; centrifugation parameters were: speed of centrifugation, time, temperature, acceleration and deceleration speeds. It was also evaluated the recovery of platelets in the final product.

Material and method: there have been evaluated 396 blood units collected during 6 months in CTS-Bucharest. There have been collected 450 ml blood in triple bags with 63 mL anticoagulant CPDA-1. For processing, we used centrifuges Jouan K R4.22 and KRi samples have been tested on hematological Analyzer Nihon Cell-Dyn. Centrifuge parameters were permanently changed depending on the results obtained from the monitoring of hematologic parameters of platelet concentrates and intermediate products, in order to identify the optimal parameters of centrifugation.

Results: From all monitored quality parameters, the total number of platelets and the recovery degree were influenced in particular by the parameters of the first centrifugation, which must be soft enough for the vast majority of platelet to remain suspended in plasma. The second centrifugation was in all cases sufficiently energetic for an efficient sedimentation of platelets and played a minor role in obtaining an optimum concentration of platelets. The cellularity degree in plasma was under the calibration range of hematological analyzer, and was indicative only; the exact evaluation can be carried out only with a flowcytometer.

The total number of platelets in platelet concentrates units were processed statistically by calculating the averages and standard deviations.

Conclusions:

- Centrifuge parameters have a major importance in getting a platelet concentrate quality with a number of platelets enough to ensure the effectiveness of therapeutic product.
- For achieving required quality in platelet concentrates, centrifugation parameters must be continuously monitored
- The effects of changes in one or more of the centrifuge parameters are determined by the number of platelets in: whole blood, red blood cell concentrates, plasma-rich platelet, and the final platelet concentrate.