3536043 SITS/M : MAJOR : TRANSFUSION SCIENCE; M.Sc. (TRANSFUSION SCIENCE)
KEY WORD : FUNCTION/MORPHOLOGY/PLATELET CONCENTRATE STORAGE 20-24°C

SUNISA ONPUNS : PLATELET CONCENTRATES : CHANGES OF THEIR MORPHOLOGY AND FUNCTION AFTER STORAGE AT 20-24°C
THESIS ADVISOR : SASITORN BEJRACHANDRA, M.D., NISARAT OPARTKIATTIKUL, MD., Ph.D., KLEOPHANT THAKERNGPOL, B.Sc. in Pharm
MS.; 81 p.; ISBN 974-589-371-4

The purpose of this reserch was to determine the qualities of platelets during storage for 3 days at 20-24°C in the first generation containers (Fenwal PL-146), on elliptical platelet incubator. Twenty platelet concentrates (PCs), prepared at Department of Transfusion Medicine, Faculty of Medicine Siriraj Hospital, were studied for pH, cell counts, platelet size, level of β- thromboglobulin (β-TG), platelet factor 4 (PF 4), lactate dehydrogenase (LDH), and platelet aggregation function at DAY 0, DAY 1, DAY 2, DAY 3. The results were further compared to freshly prepared platelet concentrates (DAY 0) and fresh platelet rich plasma (PRP) control.

The obtained results showed that the qualities of platelets at DAY 0 and fresh PRP control were similar. During 3-day storage, PCs developed considerable storage lesions caused by activation during the process of preparation and storage. The alterations, however, do not seem to affect the aggregability of platelets toward pairs of agonists. Thus the use of Fenwal PL-146 will permit the satisfactory storage of PCs for 3 days. Finally, PCs units tested meet the specification based on the requirements of the AMERICAN ASSOCIATION OF BLOOD BANKS (AABB).