Comparison of Diagnostic Procedures for Platelet Products Contaminated with Strains of Staphylococcus Epidermidis and Klebsiella

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Abstract

Background and Objective: Given that microbial contamination is the third largest cause of mortality caused blood transfusion, the examination of contamination in platelet concentrates is essential in blood transfusion centers. The purpose of this study was to achieve a rapid test for bacterial contamination of platelets concentration.

Material and Methods: This laboratory study was conducted on 14 bags of platelet concentrates prepared from Yazd Blood Transfusion Center. Six platelet bags were infected by Staphylococcus *epidermidis*; six by *Klebsiella* with a concentration of 150, 15 and 1.5, and two bags were considered as control. In specific intervals, the bags were sampled aseptically and examined by the methods including culture, gram stain, Glucose and $_{P}$H measurement.

Result: Due to the presence of dextrose, the initial glucose level of platelet bags was above 300 mg/dl. The mean of Glucose in contaminated platelet bags was progressively decreased in 3 days in that it reached 165 mg/dl in the third day (p = 0.002) . The level of ^{PH} had a declining process in that it averagely decreased from $_{P}$H 7.3 to $_{P}$H 5.2 (P=0.017). The results of culturing and smear of the bacteria were different according to the concentrations used in the study.

Conclusion: We can detect the contamination of platelet bags by measuring the level of glucose and PH level in the least amount of time.

Keywords: Blood Platelets; *Klebsiella*; *Staphylococcus Epidermidis*.

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