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Measurement of BacT/ALERT sensitivity after inoculation of certain amount of *E. coli* and *S. epidermis* in the blood bank collection center of Tehran

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Background: Transfusion of contaminated platelets concentrates (PCs) causes septic reaction and death of recipients, however. Current tempo of detection of bacterial-contaminated PCs are very important tools to implement relaible screening tests. BacT/ALERT system was introduced as the most sensitive/specific/rapid screening's test, which could be implemented in Blood Transfusion Centers. The aim of this study is to investigate whether the Bact/ALERT system as introduced, can function as relaible detection system. Furthermore, to estimate 'tempo of detection' by introducing different volume of contaminated PCs innoculated with known endconcentration of certain known bacteria.

Material and Methods: This descriptive research study was done with 24 healthy donors wholebloods' sample with inform consent, which were separated by differential centrifugation and buffy coat system into PCs. All PCs (50-70 mL) were stored under standard conditions. PCs were divided in two groups of 12 randomly selected PCs, and 10 CFU/mL was of either *E. coli* added into one, or S. epidermidis into another group. Then PCs were inoculated in BPA culture medium of BacT/ALERT system and inoculated for T0, 6, 24, 48 hrs at 37°C.

Results: The BacT/ALERT system showed imidiately positive results with *E. coli* samples (T0) with all volumes (0.5, 1, 2 ml) but with *S. epidermidis* samples showed 83% with low volumes (0.5 and 1 ml), and 91.6% positive results with high volume (2 ml) after 48 hrs incubations.

Discussions: The BacT/ALERT system dose-and sort dependent displayed positive results. Apparently sensitivity and specificity of the BacT/ALERT system are discutable issue, which needs more investigation.

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