

Results of Microbial Screening in Royan Cord Blood Bank

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Objective: Worldwide approximately 30,000 to 40,000 cord blood stem cells are cryopreserved each year and used for intravenous infusion following high dose chemotherapy and/or immunotherapy. On the other hand, storage cells can represent a potential source of microbial contamination which can be introduced at various stages of cord blood collection, processing and pre-transplant thawing. Aim of this study is screening of cord blood cells prior long term storage in Royan cord blood bank.

Materials: UCBs were collected in a closed plastic bag system from mother's serum negative for syphilis, anti HBc, HBc AG, Anti HIVI/II and Anti HCV test in delivery room. Microbial screenings (Aerobic, Anaerobic and fungal test) were performed on 3074 CBUs before and after processing.

Results: Our results showed that totally 93 units (3.02%) of 3074 CBUs were infected. Most of UCBs (about 96%) were infected before processing and at the time of delivery in the hospitals and only 4% of units were infected during the processing. *S. epidermidis* (38.1%), *Micrococcus Spp* (23.8%), *Bacillus Spp* (19.1%), *Diphtheroid bacilli* (9.5%), *Kelebsiella Spp* (4.7%) and *S. hemolyticus* (4.7%) were isolated from contaminated units.

Conclusion: These results suggest that, although rare, microbial contamination of stem cell products does occur and there must be ongoing efforts by extensive training in CB collection, good procedures and good protocols to minimize the risk for introduction of contaminants. The use of closed collecting systems has the advantage of a lower contamination rate. In our cord blood bank, we use a closed system and similar to other studies, most of microorganisms reported here as contaminants are non-pathogenic.