

عنوان مقاله:

Effects of maternal and neonatal factors on the volume of umbilical cord blood and the number of hematopoietic stem cells in frozen samples of Yakhteh Cord Blood Bank

محل انتشار:

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خلاصه مقاله:

Introduction: Umbilical cord blood (UCB) is a useful stem cell source for patients without matched family donors. It is very important to analyze the effects of maternal and neonatal factors on the volume of UCB and its hematopoietic stem cells count. The most underlying maternal-neonatal factors are gestational age, delivery type (natural or cesarean section), number of deliveries, placenta weight, umbilical cord length, etc. **Materials and Methods:** In this study, relevant records of UCB samples stored in Yakhteh Cord Blood Bank have been investigated. 413 samples of umbilical cord blood frozen in Yakhteh Cord Blood Bank from October 2012 to March 2016 were investigated. The samples were collected after birth in the hospital by midwives. The procedure of collecting samples was completely non-invasive and could make no threat for the health of mother and infant. All required information relevant to mother, infant and placenta was recorded in files of samples and information was entered in an Excel file. Then, the correlation between different maternal-neonatal parameters and their effects on blood volume and cell count was calculated using SPSS software. **Results:** In current study, mother's age showed a significant negative correlation with viability ($r=-0.109$, $p=0.040$) and positive correlation with volume of cord blood ($r=0.180$, $p=0.00$) and cell count ($r=0.138$, $p=0.006$). However, the number of previous deliveries showed significant positive correlation with volume ($r=0.106$, $p=0.049$) but no significant relationship with viability or cell count. Variables showed no significant differences among ABO and RH blood groups. On the other hand, infants' gender showed no significant effect on blood volume and cell count. Also, cesarean section showed significantly higher mean in cord blood volume versus natural delivery. **Conclusion:** As hematopoietic stem cells are recently considered as a vital treatment for severe diseases especially with blood origin, analysis of these factors is important to improve the storage conditions of hematopoietic stem cells.

کلمات کلیدی:

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