

NEONATAL PULMONARY RESEARCH

Effects of preeclampsia on the yield of hematopoietic stem cells obtained from umbilical cord blood at delivery

Background

Umbilical cord blood is an important source for CD34 + hemopoetic stem cells. Successful transplantation partly depends on the number of CD34+ cells used. Several maternal factors as well as neonatal characteristics are known to have an influence, but information about the impact of maternal diseases such as preeclampsia is limited.

Summary of results

The number of CD34 + cells in umbilical cord blood from 28 preeclamptic and 19 non-preeclamptic mothers was compared. High maternal blood pressure, low neonatal birth weight and low placental weight reduced the number of CD34 + cells obtained from cord blood samples.

Strength

Limitations

The study provides no data on the quality of umbilical cord CD34 + cells of preeclamptic mothers. The number of cells is only one important factor.

Statistical analysis shall be improved. to ensure reliability of the results. The control group is not correlated regarding birth weight, which is known to play an important role in cell number. Multivariate analysis was not performed. In addition, despite testing multiple maternal and neonatal factors, p-values were not adjusted. The presentation of data is limited on tables. Boxplots or other diagrams may approve the layout.

Practical conclusion

These data may be important for the selection of the optimal donor regarding the number of obtained CD34+ cells. It does not provide a qualitative comparison of the cells influenced by preeclampsia.

Wahid F et al., Effects of preeclampsia on the yield of hematopoietic stem cells obtained from umbilical cord blood at delivery. *J. Obstet. Gynaecol. Res.* Vol. 38, No. 3: 490–497, March 2012

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