Anthropometric outcome in low birth weight infants treated with erythropoietin; a randomized clinical trial

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Abstract:

Introduction: Erythropoietin (EPO) is a glycoprotein hormone, which has a key role in the number of red blood cells in mammalian blood.

Objectives: The aim of this study was to evaluate whether EPO is associated with anthropometric outcomes in low birth weight infants.

Patients and Methods: This study was conducted on 90 premature neonates aged under 35 gestational weeks, with the weight of less than 2000 g, and selected through convenience sampling. The subjects were assigned to EPO (n=45) and control groups (n=45) by random allocation with the aim of evaluating the relationship between EPO and anthropometric outcome, hemoglobin, and hematocrit in low birth weight infants. The weight and head circumstance of the infants were measured on their birthdays, and days 14, 28, and 42. Additionally, hemoglobin and hematocrit were measured on days 7 and 42. From day 14, EPO injection was given to the EPO group three times a week for one month (12 times). The dosage for each baby was 100 U/kg of 2000 unit ampules which was given as a subcutaneous injection in the baby's arm.

Results: The mean weights on birthday and day 42 in the EPO group were 1397 ± 270 g and 2614 ± 739 g, respectively, while in the placebo group they were 1280 ± 281 g and 1486 ± 208 g, respectively. In addition, the mean head circumstance on birthday and day 42 in the EPO group was 28.6±1.7 cm and 33 ± 2.5 cm, respectively, while in the placebo group it was 27.8 ± 2.3 cm and 29.8 ± 2.2 cm, respectively.

Conclusion: According to the results of the current study, weight gain and head circumstance gain rose significantly in the EPO group compared with the placebo group (P<0.001).

Trial Registration: The trial protocol was approved by the Iranian Registry of Clinical Trials website (identifier: IRCT20160511027853N2, https://en.irct.ir/trial/47069, ethical code; IR.QUMS.REC.1398.133).