Ligation of Patent Ductus Arteriosus for Premature Infants in Intensive Care Unit

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Abstract

Purpose: To review the results of ligation of patent ductus arteriosus in premature babies in an intensive care unit. Method: Retrospective review of premature babies who underwent ligation of patent ductus arteriosus in the intensive care unit, Grantham Hospital, during the period from January, 1999 to December, 2002. Results are compared with those who underwent ligation of patent ductus arteriosus in the operating theatre during the same period. Results: A total of 33 premature babies were recruited. Eighteen babies, including 11 male and 7 female babies with a mean gestation of 25.7 weeks (ranged from 24 to 30 weeks) and a mean birth weight of 835 grams (ranged from 625 to 1439 gram) underwent ligation of patent ductus arteriosus via a left thoracotomy in the intensive care unit. The mean body weight at the time of operation was 1132 grams with a range of 700 to 2700 grams. The indications were respiratory failure and congestive heart failure. The babies were referred from 4 different hospitals. All except 2 babies had a trial of indomethacin induction for closure of patent ductus arteriosus. All except 1 baby received surfactant treatment. The mean ductal size was 3 mm with a range of 2 to 5 mm. There were no statistical difference between the babies operated in the intensive care unit and the operating theatre in terms of the presence of bronchopulmonary dysplasia, necrotizing enterocolitis, pre-operative use of indomethacin, the size of the duct, the mean duration of anaesthesia, the mean change in oxygen requirement, ventilatory support and inotropic support. Babies undergoing ligation of the patent ductus arteriosus in the intensive care unit are significantly smaller in terms of their birth weight and their weight at surgery (p<0.001). They tend to be more premature (p<0.001) and sick as compared with those who have their surgery done in the operating theatre, with more babies having respiratory distress syndrome and intraventricular haemorrhage (p<0.05 and p<0.001, respectively). There is a significant decrease in body temperature (p<0.05) after operation in those babies who have ligation of patent ductus arteriosus performed in the operating theatre, and such a