

Extended Abstract

Does observed vs expected lung head ratio correlate with neonatal survival in infants with congenital diaphragmatic hernias?

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Objective

To investigate whether observed vs expected (O/E) lung-to-head ratio (LHR) correlates with neonatal survival in infants with congenital diaphragmatic hernia (CDH). Secondary goal was to correlate O/E LHR with Oxygenation index (OI) in the first 12 hours of life.

Methods

This was a retrospective cohort study that utilized an ongoing data base of all CDH cases treated at the University of Iowa Hospital and Clinics. LHR was measured from antenatal ultrasounds and O/E LHR was calculated using the online database on TOTALtrial.com. OI data from previously published research study at the University of Iowa was

used. The ANOVA test was used to analyze LHR data, while the Kruskal Wallis test was used to analyze O/E LHR and OI data. All analyses were performed using the SAS data analysis software.

Results

We identified 20 neonates with CDH and antenatal ultrasounds available for O/E LHR measurement. There were a total of 11 survivors and 9 non-survivors. The mean LHR was 1.62 (± 0.84) for survivors and 0.87 (± 0.54) for non-survivors ($P = 0.034$). The median O/E LHR was 29.9 (15-35.4) for survivors and 19 (16.7-23.4) for non-survivors, $P=0.425$. The median OI was 12 (9-14) for survivors and 32 (25-41) for non-survivors, $P=0.016$. There were

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no survivors when the LHR was <0.9 . There were no survivors when the OI was greater than 38.

Conclusions

LHR and OI correlate with neonatal survival. O/E LHR does not correlate with neonatal survival.

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