



## **Optimal full matching for survival outcomes in severe left diaphragmatic hernia with and without fetoscopic tracheal occlusion**

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### **Objective**

To evaluate the impact of Fetal Endoscopic Tracheal Occlusion (FETO) in improving survival for fetuses with severe left congenital diaphragmatic hernia (CDH) using an optimal full matching with temporary cases managed expectantly during pregnancy.

### **Methods**

A cohort of consecutive, isolated left-sided CDH fetuses with normal karyotype and severe pulmonary hypoplasia (liver herniation and observed/expected lung area to head ratio below 26%) were selected for FETO at less than 32 weeks of gestation in a single tertiary referenced center in Queretaro, Mexico. Cases treated with FETO were individually matched with temporary cases with similar lung size but managed expectantly during pregnancy. Postnatal outcome (survival up to 28 days after birth) was evaluated and compared.

### **Results**

Between January 2012 and April 2018, 25 CDH fetuses treated with FETO were individually matched with 25 counterparts managed expectantly during pregnancy. Endotracheal placement of the balloon was successfully performed at the first attempt in all cases. The median gestational age at balloon placement was 29.3 weeks (range, 25.6-31.8 weeks), and 34.1 weeks (range, 30.0-36.1 weeks) at balloon removal. There were no technical problems in the introduction or removal of the balloon in any of the cases. The median gestational age at delivery was significantly lower in the group with FETO than in those managed expectantly (35.6 weeks vs. 37.0 weeks,  $p=0.04$ , respectively). Survival rate was significantly higher in the group with FETO than in those without fetal intervention (32% vs. 0%,  $p<0.01$  respectively).

### **Conclusion**

Using optimal pair-matching with similar lung size, FETO was associated with improved postnatal survival in CDH fetuses with severe lung hypoplasia.