Objective
To compare ultrasound (US) and magnetic resonance imaging (MRI) in the assessment of mediastinal shift angles (MSA) in fetuses affected by isolated left sided congenital diaphragmatic hernia (CDH). The use of MRI-MSA and US-MSA as prognostic factor for postnatal survival in fetal left CDH was also explored.

Methods
This was an observational study of 29 fetuses with prenatally diagnosed isolated left CDH, assessed with both US and MRI examinations between January 2015 and December 2018. The US-MSA measurements performed within two weeks from the MRI assessment were considered for the analysis. The primary outcome was postnatal survival rate.

Results
No significant difference between US and MRI-MSA values was detected (p=0.419, Figure 1). Among the 29 cases there were 21 alive infants, for an overall postnatal survival rate of 72.41%. Regarding the postnatal survival, the best cut-offs in terms of sensitivity and specificity were 42.1° for the US-MSA and 39.1° for the MRI-MSA since they have demonstrated the highest discriminatory power. The performance of MRI-MSA in predicting postnatal survival was close to that of US-MSA in terms of sensitivity (62.5% vs. 50.0%), specificity (80.9% vs. 90.5%), positive predictive value (55.6% vs. 66.7%), negative predictive value (85.0% vs. 82.6%) and accuracy (75.9% vs. 79.3%). There was no statistically significant difference between the two modalities (p > 0.05 for all).

Conclusion
MRI and US can be used interchangeably for the assessment of MSA in prenatally diagnosed isolated left CDH. Moreover, MSA measured by both US and MRI was confirmed to be correlated with perinatal outcome in terms of survival.