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Can circular RNAs be used as prenatal biomarkers for congenital diaphragmatic hernia?

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Circular RNAs are dysregulated in lungs of congenital diaphragmatic hernia patients, a malformation of the lung and diaphragm. These results suggest that they can serve as prenatal biomarkers to improve prognostication and diagnostic accuracy. <http://bit.ly/2Cz7Bzm>

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To the Editor:

Since 2000, more than 400 000 babies worldwide have died of congenital diaphragmatic hernia (CDH), a condition that is occurring as frequently as cystic fibrosis and characterised by underdeveloped lungs (pulmonary hypoplasia), persistent pulmonary hypertension and a diaphragmatic defect [1]. CDH can be diagnosed prenatally with ultrasound and fetal MRI, but outcome prediction and diagnostic accuracy remain imperfect [2]. The observed over expected lung-to-head (O/E LHR) ratio at 22–23 and 32–33 weeks of gestation is currently used to predict CDH outcomes [3]. A prenatal biomarker for the assessment of disease severity and prognostication has not been established yet. In contrast to cystic fibrosis, a common genetic cause has not been identified for CDH, suggesting that epigenetic and environmental factors are involved in the pathogenesis. We have previously discovered that microRNA 200b (miR-200b) is highly dysregulated in hypoplastic human CDH lungs and that miR-200b administration can serve as a prenatal therapy in an animal model for CDH [4, 5].