

EP09.41 Atrial isomerism: prenatal diagnosis, associated extracardiac malformations and perinatal outcomes.

Ana G. Espinosa-Reyes¹ MD, Sandra Acevedo-Gallegos MD, MSc, PhD ¹, Yazmin Copado-Mendoza¹ MD, MSc, Mario I. Lumbreras-Marquez¹ MD, Dulce Maria Camarena-Cabrera¹ MD, MSc, PhD, Juan Manuel Gallardo-Gaona¹ MD, MSc, PhD, Maria J. Rodriguez-Sibaja¹ MD, José Antonio Ramirez-Calvo¹ MD, Berenice Velazquez-Torres¹ MD, Yubia Amaya-Guel¹ MD, Alfonso D. Martínez- García² MD.

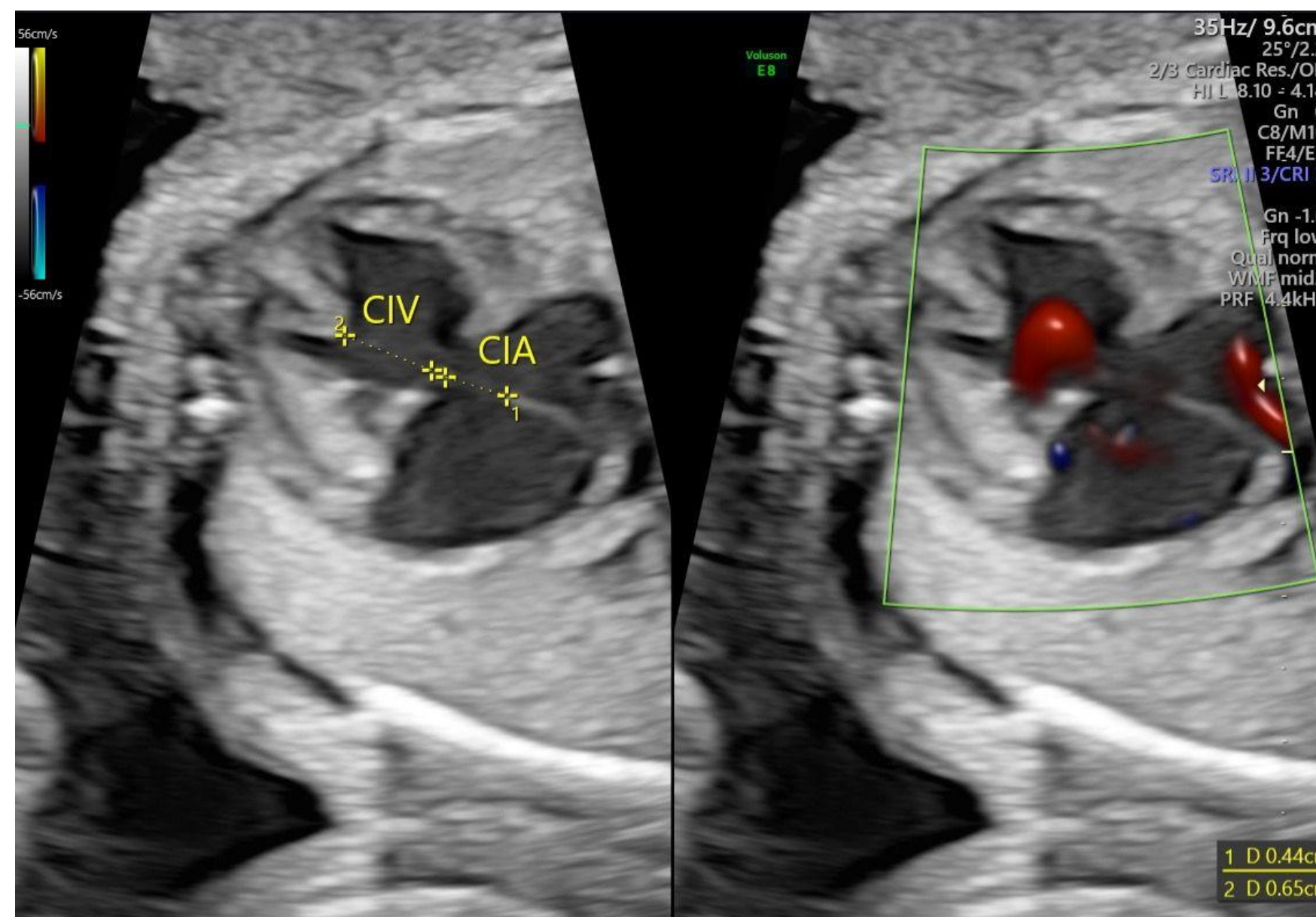
1. Maternal-Fetal Medicine, Instituto Nacional de Perinatologia, Ciudad de Mexico, Mexico. 2. Fetal Cardiology Clinic, Instituto Nacional de Perinatologia, Ciudad de Mexico, Mexico

Objective

To describe the spectrum of cardiac abnormalities, extracardiac malformations, and perinatal outcomes in pregnancies with prenatal diagnosis of atrial isomerism (AI), stratified by type.

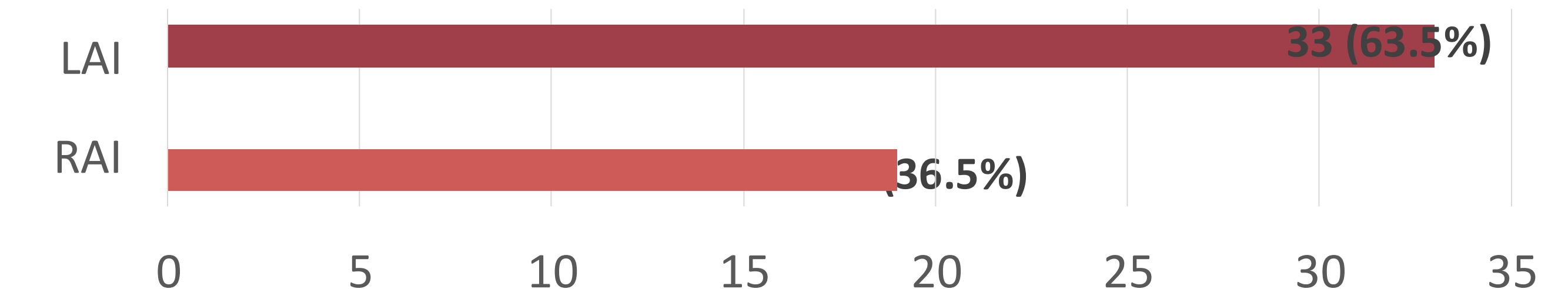
Methods

A single-center case series (2018–2024) at a tertiary hospital. Retrospective data were collected from singleton pregnancies diagnosed with right (RAI) or left atrial isomerism (LAI) by the Fetal Cardiology Clinic, with prenatal care and delivery at our institution.



Results

A total of 52 cases were analyzed:



- Most frequent congenital heart defect was atrioventricular septal defect (AVSD) (57.7%), followed by double outlet right ventricle (34.6%), total anomalous pulmonary venous connection (26.9%), and isolated ventricular septal defect (26.9%).
- Extracardiac malformations were common, mainly gastrointestinal (33.3%) and central nervous system anomalies (26.7%). Pregnancy termination was low (3.0%), but fetal death occurred in 11.5%, more frequently in LAI (15.2%) than RAI (5.3%). The live birth rate was 88.4%, higher in RAI (94.7%) than LAI (84.8%).
- Mean gestational age at birth was lower in RAI (32.6±4.5 weeks) than LAI (37.4±5.2 weeks), as was birth weight (2,586±659.5 g vs. 3,095±621.3 g). Neonatal mortality was 16.0%, higher in LAI (19.4%). Intensive care was required in 4.0%. Palliative management was more frequent in RAI (36.8% vs. 9.7%), and referral to pediatric cardiology was higher in RAI (15.8% vs. 6.5%).

Conclusions

Atrial isomerism is strongly associated with congenital heart defects, mainly AVSD and double outlet right ventricle, as well as extracardiac malformations. Perinatal outcomes differ by AI type, with higher neonatal mortality in LAI, highlighting the need for early detection and individualized management.