

Interobserver agreement in prenatal Congenital Heart Disease between maternal-fetal medicine and pediatric cardiology

Malek N. Nassar¹, Wael Abdallah³, Assaad Kesrouani¹, Linda S. Daou²

- 1. Obstetrics and Gynecology, Universite Saint-Joseph de Beyrouth, Beirut, Lebanon.
- 2. Pediatrics, Universite Saint-Joseph de Beyrouth, Beirut, Lebanon.
- 3. Obstetrics and Gynecology, Lebanese American University, Beirut, Lebanon.

Objective

To evaluate the interobserver agreement in the prenatal diagnosis of congenital heart disease (CHD) between Maternal-Fetal Medicine (MFM) specialists and pediatric cardiologists (PC), and to assess the incremental value of specialist referral.

Methods

Retrospective review of prenatally suspected CHD cases (2016–2025). Diagnoses made by MFM specialists were compared with those of PC. CHD were additionally classified as simple or complex. Interobserver agreement was evaluated using Cohen’s kappa and adjudicated by a blinded reviewer.



Corresponding Author:

Malek Nassar, MD
Director Clinique de Diagnostic Prenatal
Faculty of Medicine, Université Saint Joseph, Lebanon
Board Member Lebanese Society of Perinatology
Email: drmaleknassar@yahoo.fr

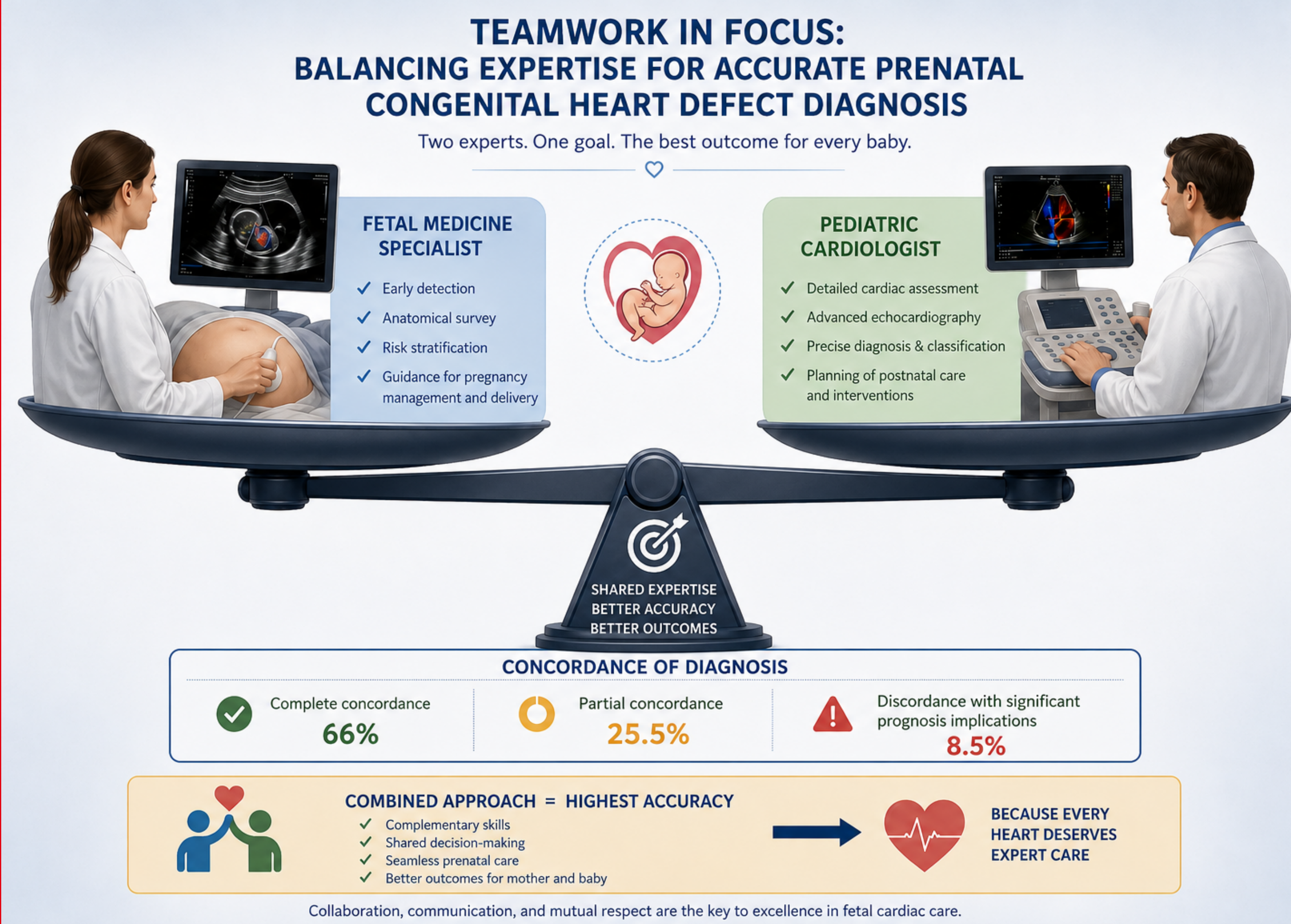
EP 08.47

Results

A total of 146 cases of CHD were identified over the study period. Associated anomalies were present in 38.3% of cases.

A subgroup analysis of 48 cases assessed by both an experienced MFM specialist and a PC was performed. The median gestational age at diagnosis was 22 weeks, and 91.5% of cases were isolated CHD. NIPT and Invasive genetic testing was performed in 19 % and 12.7% of cases respectively.

Overall diagnostic concordance was 66% complete, 25.5% partial (without impact on management or prognosis), and 8.5% discordant with significant prognostic implications. When CHD were classified as simple versus complex, interobserver agreement was moderate, with a kappa coefficient of 0.55. Concordance was highest for VSD (100%) and transposition of the great arteries (80%).



Conclusion

Prenatal diagnosis of CHD by MFM specialists demonstrates good overall accuracy. However, referral to pediatric cardiology provides significant incremental value, improving diagnostic classification and refining prognostic assessment. Moderate interobserver agreement highlights the importance of multidisciplinary evaluation, particularly in complex CHD.

