4472: Prenatal origin of cardiovascular remodeling and dysfunction in preterm labor and premature rupture of membranes: impact of intra-amniotic infection and/or inflammation

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Objective

To assess the influence of intraamniotic infection and/or inflammation (IAI) on the fetal cardiac structure and amniotic fluid cardiovascular damage biomarkers in preterm labour (PTL) and/or preterm prelabour rupture of membranes (PPROM).

Methods

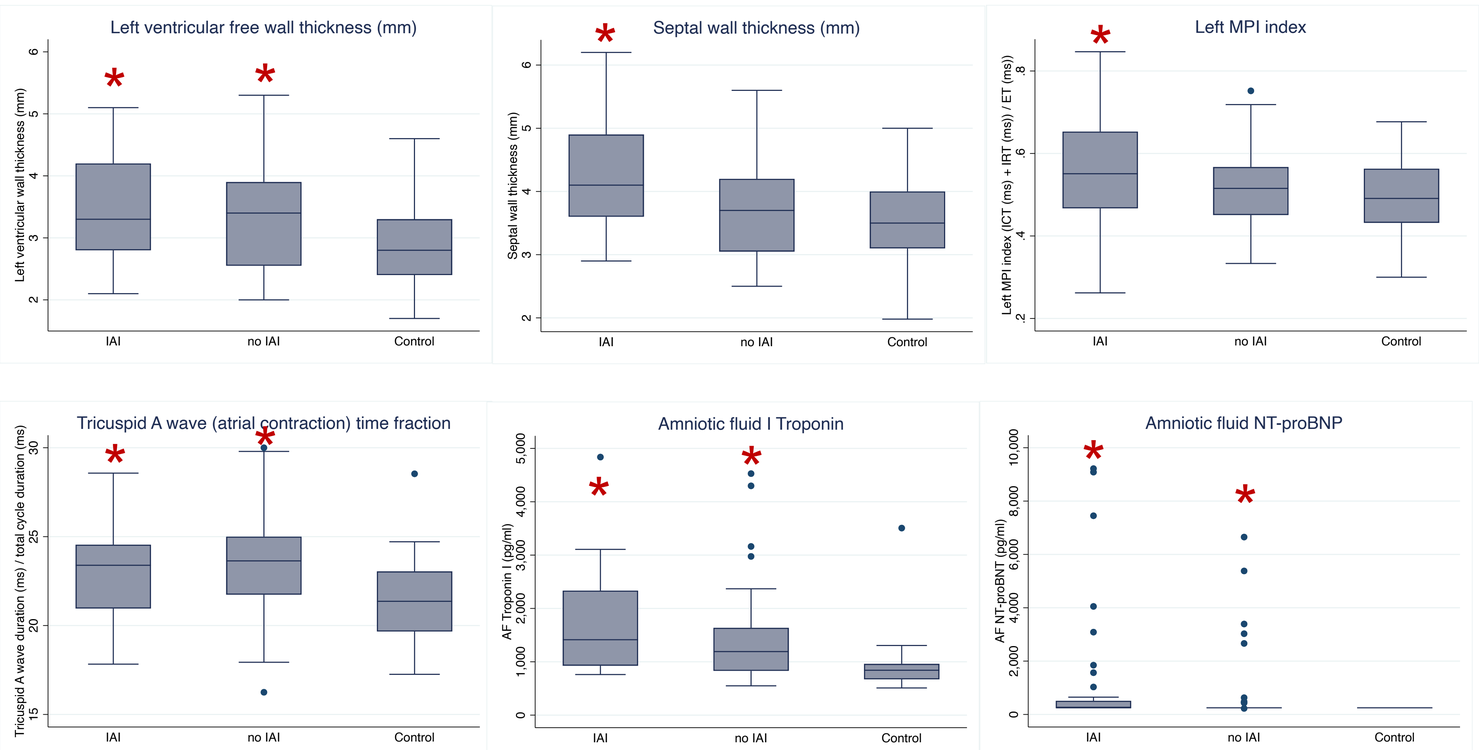
Prospective cohort study including singleton pregnancies with PTL and/or PPROM with an amniocentesis at admission. Study echocardiography was performed 24-72 hours from admission. Controls were women without PTL/PPROM at similar gestational age. IAI was defined by a positive culture and/or high levels of amniotic fluid Interleukin-6. troponin-I and N-terminal pro-brain natriuretic peptide (NT-proBNP) concentrations were measured in amniotic fluid.

Conclusion

Fetuses with PTL/PPROM had signs of cardiac remodeling (global concentric myocardial hypertrophy without cardiomegaly) and subclinical dysfunction, which were more pronounced in those exposed to IAI. These findings support that the cardiovascular effects observed in children and adults born preterm have, at least in part, a prenatal origin.

Results

We included **41 fetuses in the IAI group, 54 in the no- IAI group, and 48 in the control group**. Mean gestational age at ultrasound was 28.8 weeks without significant differences between groups. Maternal and pregnancy outcomes were comparable. Data was adjusted for estimated fetal weight below the 10th percentile and for PPROM at admission, and also for gestational age at amniocentesis whem amniotic fluid biomarkers were compared.



* $p < 0.05$ compared to control group