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Cardiometabolic sex differences in adults born small for gestational age

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Objective

To assess cardiometabolic sex similarities and differences in adults born small for gestational age (SGA).

Methods

Ambispective cohort study from a birth registry in Barcelona, Spain including adult participants (20-40 years-old) subdivided as born SGA (birth weight <10th centile) or adequate fetal growth for gestational age (controls). Cardiometabolic health was assessed by echocardiography, electrocardiogram, blood pressure measurement, vascular ultrasound, anthropometric measures and blood biomarkers. Stratified analyses by sex included estimation of Adjusted Absolute Difference (AAD) using inverse probability weighting.

Results

As compared to controls, the stratified analyses by sex showed a more pronounced reduction in ejection fraction (AAD: female -1.73 (95%CI -3.2 to -0.28) vs male -1.33 (-3.19 to 0.52)) and increment in heart rate (female 3.04 (0.29 to 5.8) vs male 2.25 (-0.82 to 5.31)) in SGA females as compared to SGA males. In contrast, a more pronounced reduction in PR interval (female -1.36 (-6.15 to 3.42) vs male -6.61(-11.67 to -1.54)) and increase in systolic blood pressure (female 0.06 (-2.7 to 2.81) vs male 2.71 (-0.48 to 5.9)) and central-to-peripheral fat ratio (female 0.05 (-0.03 to 0.12) vs male 0.40 (0.17 to 0.62)) were mainly observed in SGA men as compared to SGA women.

Conclusion

Sex-differences were observed in the effect on SGA on cardiometabolic endpoints with women being more prone to cardiac dysfunction and men to electrocardiographic, vascular and metabolic changes. Future research including sex-stratification data is warranted.