Correlation of global cardiac sphericity index and neonatal outcomes of appropriate for gestational age foetuses, small for gestational age foetuses and growth restricted foetuses delivered at term in Dr. Jose Fabella memorial hospital: a prospective cohort study

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Objective. To evaluate and compare the Global Cardiac Sphericity Index (GCSI) of AGA foetuses, SGA foetuses, and growth-restricted foetuses scanned at term in the Dr. Jose Fabella Memorial Hospital, Maternal High Risk and to determine the correlation between the GCSI of these three groups of foetuses and their neonatal outcomes.

Materials and Methods. The study prospectively evaluated and compared the global cardiac sphericity index of AGA, SGA, and growth-restricted foetuses. Pregnant women at term seen at the Out-Patient Department and scanned at the Maternal High-Risk Clinic of the Dr. Jose Fabella Memorial Hospital then eventually delivered from March to May 2022 were included.

Results. Global cardiac sphericity index was measured with 147 foetuses (106 AGA, 38 SGA and 3 growth restricted foetuses). The results indicated that the GCSI of AGA foetuses were higher than that of the SGA and growth restricted foetuses. In this study found that there is significantly higher frequency of abnormal GSCI among SGA and growth restricted foetuses. This study also found that there is no statistically significant correlation between the GCSI measurements of these three groups of foetuses and their neonatal outcomes.

Conclusions. Abnormal global cardiac sphericity index was found in foetuses with an estimated foetal weight < 10^{th} percentile (more specifically in growth restricted foetuses than in those who are just SGA) as compared with appropriate for gestational age foetuses. However, the correlation between an abnormal GCSI in any of these three groups of foetuses and their neonatal outcome needs further investigation.