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Evaluation of gestational sac diameter, crown rump length, yolk sac diameter and fetal heart rate in early detection of congenital fetal malformation

Thesis

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Abstract

KEY WORDS: Scan, miscarriage, fetal malformation

Congenital abnormalities impact 3% to 5% of all pregnancies, and they are the leading cause of newborn death. The majority are caused by unknown factors, with pregnancy being the sole risk factor. However, in both affluent and developing nations, they are responsible for rising newborn fatalities.

THE AIM OF THE WORK :Our objective is to prospectively validate the use of gestational sac (GS), crown-rump length (CRL), yolk sac (YS) diameter and embryonal heart rate (HR) dimensions for early detection of congenital fetal malformation.

Among cases, 77 (77%) had a normal pregnancy, 20 (20%) had an early miscarriage, 3 (3%) had Congenital fetal malformation. This study revealed no statistically significant difference between normal and Early miscarriage, congenital fetal malformation results of scan regarding Age and BMI ($p > 0.05$). The significant difference between a normal, early miscarriage and congenital fetal malformation results of scan regarding YS diameter and GS diameter ($p < 0.05$). There is a highly significant difference between normal, early miscarriage and congenital fetal malformation results of scan regarding Yolk sac shape, FHR, and CRL ($p < 0.001$).

Conclusion : Our study concluded that measurement of these parameters (gestational sac (GS), yolk sac (YS) shape and diameter, crown-rump length (CRL), and embryonic heart rate (HR)) during the first trimester of pregnancy proved to be an important, helpful, and non-invasive tool in the investigation, diagnosis, and follow-up of pregnant women in their early pregnancy