Diagnostic Accuracy of Fetal Anterior Abdominal Wall Thickness as an Early Sonographic Sign for Diagnosing Gestational Diabetes

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- **Introduction**
- Traditionally, different fetal variable measurements are used in ultrasound to assess fetal growth. Ultrasound can detect abnormal fetal growth. Gestational diabetes mellitus (GDM) is linked to higher fetal obesity as early as 20 weeks of pregnancy. The amount of fetal adipose tissue may be measured by measuring the thickness of the anterior abdominal wall. Measuring the thickness of the fetus's anterior abdominal wall (AAWT) is a straightforward procedure that may be performed alongside standard abdominal circumference measurements. [1-2]
- **Objectives**
- To check the diagnostic accuracy of fetal AAWT as an early sonographic sign for diagnosing GDM, keeping oral glucose tolerance test as the gold standard.
- **Study design**
- This research was conducted using a cross-sectional analysis.
- **Materials and methods**
- Women between the ages of 18 and 45 who had a family history of type 2 diabetes and were at risk for developing GDM were recruited. Exclusions were made for diabetic women, those carrying multiples, and those with autoimmune diseases. The AAWT measurement of the fetus, which included the skin and subcutaneous tissue, was acquired using the traditional anterior cranial view, 2-3 cm lateral to cord insertion. Pregnant patients at risk for GDM underwent screening using an oral glucose tolerance test. Those exhibiting any two abnormal values were diagnosed with GDM.



- **Study place and duration**
- The study was conducted in the Radiology Department at Rawalpindi Medical University and Allied Hospitals from July 10, 2019 to January 9, 2020.
- **Results**
- The overall sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic accuracy of fetal AAWT as an early sonographic sign for diagnosing GDM, with the oral glucose tolerance test as the gold standard, were 93.14%, 82.65%, 84.82%, 92.05%, and 88.0%, respectively.
- **Conclusion**
- The study concludes that the diagnostic accuracy of fetal AAWT as an early sonographic indicator for identifying gestational diabetes is notably high.
- **References:**

- Sinno SH, Nassar AH: Role of ultrasonography in pregnancies complicated by gestational diabetes: a review. Matern Fetal Med. 2019, 1:86-90. 10.1097/FM9.0000000000000013
- Nguyen CL, Pham NM, Binns CW, Duong DV, Lee AH: Prevalence of gestational diabetes mellitus in eastern and southeastern Asia: a systematic review and meta-analysis. J Diabetes Res. 2018, 2018:6536974. 10.1155/2018/6536974

BIOGRAPHY : Dr Muhammad Mujeeb Hassan is working in the field of Internal Medicine with a keen interest in Research. Due to his work, he was able to make significant contributions in improvement of healthcare delivery and education.