

# Utility of Ultrasonographic Markers in Fetal Gastroschisis in Predicting Time to Oral Feeding in NICU

## Authors

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## Objective

To establish predictive ultrasonographic markers that could be useful in determining time to feed in the NICU and in turn length of stay.

## Methods

A retrospective chart review was performed on patients delivered at Memorial Health University Medical Center with gastroschisis between 2006 and 2016. We used ultrasonographic markers used in other studies such as intra-abdominal bowel dilatation (IABD) and extra-abdominal bowel dilatation (EABD) in the second and third trimesters. These primary variables were obtained from the stored data in the Viewpoint ultrasound reporting system. The primary outcome was the time to feed in NICU measured in days with a secondary outcome being the length of stay (LOS). Secondary variables such as amniotic fluid volume, gestational age and estimated fetal weight were also evaluated. Pearson correlation coefficient was performed using SPSS software. T-test was used to determine correlations between secondary neonatal variables and time to feed as well as LOS. These variables included type of post-delivery surgical repair, bowel resection, necrotizing enterocolitis, ileus, and sepsis acquired in NICU.

## Outcome

EABD was not predictive of time to feed or LOS ( $p=0.252$  and  $0.074$ , respectively) in infants with gastroschisis. Ultrasound data was limited in obtaining IABD in the second and third trimester and IABD in third trimester. Increased gestational age at birth showed decreased LOS, ( $p=0.041$ ). Amniotic fluid volume in the third trimester was significantly correlated with a decrease in time to feed, ( $p=0.008$ ) and LOS, ( $p=0.001$ ). Neonatal sepsis was also correlated with longer time to enteral feeds, ( $p=0.047$ ).

## Discussion

While several studies have compared the utility of antepartum IABD and EABD in predicting neonatal outcomes, few have compared time to oral feeding. However, no statistically significant correlation was found in our study. Much of our data was limited by the inability to extract IABD and EABD in the second and third trimester. Additionally, our patient population was small, ( $n=55$ ). Larger prospective studies are needed to help identify ultrasound markers for those fetuses with gastroschisis at high risk for neonatal complications.