

## Fetal and Maternal Outcomes of Isolated Single Umbilical Artery

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### Abstract

**Background:** The umbilical cord normally consists of two arteries and one vein. Single umbilical artery (SUA) is a condition in which the cord contains only one artery. SUA may be isolated or associated with congenital anomalies. This anatomic variation can be detected by ultrasound evaluation in approximately 0.5% of pregnancies. The incidence of adverse outcomes primarily depends on whether SUA is an isolated finding or associated with fetal abnormalities and aneuploidy. The aim of this study was to investigate fetal and maternal outcomes of isolated SUA.

**Methods:** In this cohort study, 21 fetuses with isolated SUA, and 21 fetuses with normal three-vessel umbilical cord were included. All cases were examined by advanced fetal anomaly scan. In addition, cardiac, genitourinary, musculoskeletal, gastrointestinal, and neurologic anomalies were excluded. Two groups were monitored during pregnancy, at delivery, and neonatal period. Perinatal and maternal outcomes were recorded.

**Results:** Among 21 fetuses with isolated SUA, the left and right arteries were absent in 12 and 9 fetuses, respectively. Interestingly, the mean head circumference at birth was significantly lower in the isolated SUA group compared to the 3-vessel group (33.35 + 2.06 cm vs 35.21 + 1.47 cm,  $P = 0.002$ ). However, there was no statistically significant difference between the two groups in birth weight and length, as well as incidence of polyhydramnios, oligohydramnios, intrauterine growth retardation, intrauterine fetal death, small for gestational age, preterm delivery, cesarean delivery due to fetal distress, and neonatal intensive care unit admission.

**Conclusions:** In the absence of associated anomalies, the risk of incidence of adverse events does not appear to be increased significantly with isolated SUA. Therefore, supplementary assessment and invasive tests are not recommended in fetuses with isolated SUA, unless fetal abnormalities are detected in routine evaluations.

**Keywords:** Fetus, Isolated, Single Umbilical Artery, Ultrasound

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