The comparison of placental pathology between small for gestational age (SGA) and appropriate for gestational age (AGA) infants

Objectives: The present study aimed to evaluate placental morphology in SGA and AGA neonates with using of the macroscopic and microscopic finding of the placenta, membranes, and cord.

Methods: This analytic case-control study was performed from 2016 to 2017 years, between Obstetrics and Gynecology and pathology departments of Ahvaz Imam Khomeini Hospital. Thirty placentas of SGA infants and 30 placenta of AGA infants were examined for pathologies. The obtained placentas were macroscopically examined after removal of extra vessels and isolation of membrane. The histological microscopic examination was taken by an expert pathologist who didn't know the classification of the placentas. Data analysis was performed using SPSS ver.23 (SPSS Inc. Chicago, IL, USA).

Results: In this study, 60 women and their neonates were included. The mean age of pregnancy was (37.3 ± 1.5 weeks) 260.9 ± 10.2 days for SGA group and (38.4 ± 0.7 weeks) 269.0 ± 4.8 days for AGA groups and both groups were matched. Membranes insertion frequency in both groups was reported marginally (the normal insertion at the margin of placenta). There was significant difference in placental weight (p = 0.001) and the fetal placental weight ratio (FPR)(p<0.001) in SGA and AGA groups. In addition, in Microscopic Examination of the placenta, villous infarction, decidual necrosis, villitis, chorioangiosis and perivillous fibrin deposition variables were found to be higher in SGA group than AGA group.

Conclusions: This study showed that the characteristics of placental insufficiency such as infarct, decidual necrosis, lower placental size, fetal placental weight ratio (FPR), and perivillous fibrin deposition are more common in SGA term neonates than in AGA term neonates.