

Percentiles of intrauterine placental volume and placental volume relative to fetal volume: A prospective magnetic resonance imaging study

Helene Peterson¹, Anne Eskild¹, Silje Sommerfelt¹, Kjell Gjesdal¹, Arne Borthne¹, Lars Mørkrid², and Vigdis Hillestad¹

¹Akershus University Hospital

²Oslo University Hospital

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Abstract

Objective: Provide normative data on intrauterine placental size and placental size relative to fetal size (placental to fetal ratio). Design: Prospective study. Setting: Akershus University Hospital, Norway. From April 2017 to May 2018. Population: 107 unselected singleton pregnancies recruited at routine antenatal care. Method: The pregnancies were examined by magnetic resonance imaging (MRI) at gestational week 27 and 37. Based on the estimated volumes of the placenta and the fetus, we calculated median and percentiles at the gestational weeks 27 and 37, and we assumed linear growth in the intermediate interval. Main outcome measures: Median placental volume (cm³) and placental to fetal ratio (placental volume cm³/fetal volume cm³). Results: Median placental volume at gestational week 27 was 513 cm³ (Inter Quartile Range (IQR) 182 cm³), and it was 831cm³ (IQR 252 cm³) at week 37. Median placental to fetal ratio was 0.54 (IQR 0.18) at gestational week 27 and 0.31 (IQR 0.08) at week 37. The 10th – 90th percentiles included placental volumes between 392-717 cm³ at gestational week 27, and 631-1087 cm³ at week 37. The corresponding 10th-90th percentiles included placental to fetal ratios between 0.43-0.73 and 0.25-0.39. Conclusions: This study provides normative data about intrauterine placental volume and placental volume relative to fetal volume. Such data are important for the diagnostics of abnormal growth. Funding: The South-Eastern Norway Regional Health Authority (grant number 277901 and 2020013) and the Strategic Research Funding at Akershus University Hospital (grant number 269903). Keywords: Placenta, placental to fetal ratio MRI, pregnancy, percentiles

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Figure 1.EPS available at <https://authorea.com/users/735944/articles/711942-percentiles-of-intrauterine-placental-volume-and-placental-volume-relative-to-fetal-volume-a-prospective-magnetic-resonance-imaging-study>

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