

Gestational Sac Volume Can Replace the Role of Mean Sac Diameter in Very Early Pregnancy?: Preliminary study

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The purpose of this study is to evaluate the correlation between gestational sac volume(GSV) and gestational age. It also aims to verify ultrasonic measurement of gestational sac volume in gestational age determination with three-dimensional vaginal ultrasound. The cross-sectional study has been conducted in 242 singleton pregnancy. 45 pregnancy were excluded due to early pregnancy failure or follow-up loss. In 197 uncomplicated pregnancy at 5 to 12 weeks' menstrual age, gestational sac volume, mean sac diameter and crown-lump length were measured for the assessment of gestational age. Gestational sac volumetry was carried out in three orthogonal planes using the cystic contour mode. Polynomial regression analysis was used to construct the best 'fit' curve to predict the gestational age in each biometric parameter. Its analysis demonstrated statistically significant positive correlation between gestational age and gestational sac volume (r 0.780, $p < 0.0001$), like mean sac diameter (r 0.750, $p < 0.0001$) and crown-lump length (r 0.962, $p < 0.0001$)-the strongest correlation. The 5th, 50th and 95th percentiles of the gestational sac volume was calculated and the normogram was tabulated. Measurement of gestational sac volume is reliable, convenient and reproducible means for assessing gestational age and it can be considered as a biometric parameter in gestational age determination.