Objectives
To explore the feasibility of Smart-Planes Fetal Heart (S-Planes FH) software in visualization of the fetal ventricular outflow tract views, and to evaluate the agreement and reliability of S-Planes FH software in determining fetal aortic and pulmonary artery dimensions.

Methods
185 fetuses with singleton pregnancy were enrolled. Each fetus had undergone conventional two-dimensional (2D) echocardiographic examination and three-dimensional (3D) dynamic volume datasets were obtained based on four chamber view (4CV). Per patient one optimal volume was selected for offline analysis using S-Planes FH software. The diameters of aorta (AO) and pulmonary artery (PA) were measured from 2D and S-Planes FH images, respectively. The agreement and reliability of the two methods was verified by Bland–Altman’ method and intraclass correlation coefficient respectively.

Results
Fetal ventricular outflow tracts view were successfully obtained using S-Planes FH in 173 (93.5%) cases from 185 fetuses whose ventricular outflow tracts view were all obtained by fetal 2D sonography. Bland–Altman’ method shows that there was a good agreement between the two methods, and the 95% CI of limits of AO and PA were respectively calculated in (-1.0053, 1.1777), (-1.0270, 1.7907). The intraobserver and interobserver Intra-class correlation coefficient (ICCs) in this study were greater than 0.81 for two vessels dimension.

Conclusion
S-Planes FH software, as an aid method for prenatal screening of CHD, has potential to obtain fetal ventricle outflow tract views and to accurately measure the diameters of great arteries.