Background: The spectrum of left ventricular hypoplasia in fetal life is broad. It can vary from mild left ventricular hypoplasia to the other end of the spectrum as Hypoplastic left heart syndrome. Borderline left ventricle can be a challenge in fetal life, especially regarding counseling parents. Despite of the presence of left heart disease, many of these patients can achieve a biventricular repair. We sought to retrospectively determine fetal echocardiographic factors associated with neonatal intervention and describe the clinical outcome of these fetuses.

Methods: Fetuses were included who had a left ventricle that was below -2 (zscores) normal for length or diameter and had forward flow across the mitral and aortic valves.

Results: From 1993 to 2013, 300 fetuses had a fetal echocardiogram at our institution. 24 Fetuses were included in the study. Additional diagnosis were present: 12 fetuses had a ventricular septal defect, 18 were highly suspicious for a coarctation, 2 for aortic arch interruption. There were 15 live births: 4 neonates with aortic arch repair in the neonatal period, 5 with no intervention, 3 with initial Hybrid procedure, converted to biventricular repair later on, one underwent biventricular repair and 1 neonatal death. One was born extremely premature with a birth weight of 800 gramms, which underwent ballondilatation in the neonatal period. Nine fetuses were lost to follow up and two pregnancies were terminated.

Discussion: The need for early neonatal intervention cannot always be predicted by fetal echocardiography. Factors such as prematurity and additional defects play an important role.