Introduction
Cutting balloon angioplasty (CBA) is a promising technique for the treatment of highly challenging vascular stenosis especially in peripheral pulmonary artery stenosis. We will present our experience on CBA for the treatment of branch pulmonary stenosis (BPS) in childhood.

Methods
Seventeen children <5 years old, median age of 18 (4.5-54) months, median weight of 9 kg (5.5-16), with BPS after surgical repair of congenital heart diseases treated with CBA were prospectively analyzed. We used staged approach for dilation of stenotic vessel to avoid rupture. After CBA, further dilation was performed with optimal size low pressure balloon (LPB), and if it was not effective, dilated 1-2mm<optimal size high-pressure balloon (HPB) was used. If result was insufficient, optimal size LPB was used again.

Results
Diagnosis of children was s/p Jatene in 12, s/p tetralogy of Fallot in 2, repaired truncus arteriosus in 2, s/p Glenn in 1. Twenty-eight vessels were dilated with CBA. Stenotic vessels were RPA in 4, LPA in 2, bilateral pulmonary artery in 11. Nine vessels underwent subsequent LPBA and 19 vessels underwent HPBA. The diameter of the vessels increased from 3.2±1.08 to 5.2±1.4 mm (p <0.001). The RV/LV pressure ratio decreased from 0.92±0.14 to 0.59±0.17 (p =0.001). Vessel diameter increased by >%50 in 14 patients; procedural success rate was 82%. Increase in vessel diameter <%50 was observed in 2 patients, CBA was failed to dilation in 1 patient. Patients with supra-valvar stenosis after Jatene procedure were least responsive group (2/5). Success rate was significantly higher in patients who underwent additional HPBA as compared with additional LPBA (%95 vs %66). The procedure and fluoroscopy times were 213±56 and 58±16 minutes, respectively. In one s/p Jatene patient, ascending aorta to the RPA fistula was developed and underwent to surgery due to significant residual shunt after device closure. No procedure related mortality was observed. At a median follow-up of 15 months, 2 patients who successfully treated with CBA underwent operation for supra-valvar pulmonary stenosis.

Conclusions
CBA is a feasible technique for treatment of BPS. CBA can be useful to delay the intervention up to appropriate age for pulmonary stent implantation.