Introduction:
It is reported that patients with pulmonary hypertension (PH; systolic pulmonary arterial pressure (sPAP) \( \geq 35 \) mmHg)) have frequent cardiac complications after transcatheter aortic valve implantation (TAVI). PH often gets worse in some patients despite the normal cardiac function after TAVI. No studies have ever examined prognosis after TAVI in patients with or without worsening of PH. Therefore, we retrospectively examined the frequency of mid- to long-term heart failure and cardiac death in patients with and without deterioration of PH after TAVI.

Methods:
Among 113 patients who underwent TAVI at our hospital between February 2014 and March 2016, we analysed 27 patients with PH (sPAP \( \geq 35 \) mmHg) before surgery. sPAP was measured in transthoracic echocardiography before and within 1 week after TAVI. Patients were divided into two groups according to whether sPAP worsened/did not change or improved after TAVI. We examined the frequency of admission due to heart failure or cardiac death (death caused by heart failure, angina, or myocardial infarction) during the period of 3 years after TAVI.

Results:
PH worsened or did not change after TAVI in 9 patients, while it improved in 18 patients. The left ventricular ejection fraction measured within 1 week after TAVI showed no difference between the two groups (56.6±11.9% vs 58.4±10.0%, p=0.71). The worsened/ no change group was higher in frequency of admission due to heart failure (logrank; p<0.05) and cardiac death (logrank; p<0.04).

Conclusion:
Despite successful treatment for AS by TAVI, the frequency of heart failure and cardiac death was higher in patients who did not show improvement of PH after TAVI, even in the absence of cardiac function decrease. Vigorous intervention for PH worsening after TAVI may be helpful to improve prognosis.