Background: Reports of isolated tricuspid valve replacement (iTVR) are relatively rare. This study analyzed our 14-year experience with iTVR and evaluated independent risk factors of surgical morbidity and mortality after iTVR.

Materials and methods: We retrospectively reviewed 118 consecutive patients (42 male; mean age, 49.1 ± 12.9 years) who underwent iTVR between May 2003 and April 2016 in our center. The multivariate logistic regression model was used to analyze the independent risk factors associated with perioperative morbidity and mortality following iTVR.

Results: Before operations, 101 patients (85.6%) were classified as New York Heart Association (NYHA) functional class III or IV. The overall operative mortality was 11.8% (14/118) and a statistically significant difference was identified between the nonreoperative group and the reoperative group (6.7% vs. 18.3%, p=0.047). The independent risk factors of perioperative death were preoperative NYHA functional class IV (OR=15.43, 95%CI 3.46-68.83, p=0.000) and ascites (OR=4.88, 95%CI 1.24-19.27, p=0.024). The perioperative major adverse events were only independently associated with previous cardiac surgery history (OR=3.28, 95%CI 1.41-7.62, p=0.006).

Conclusions: The present study revealed that iTVR is currently feasible with acceptable rates of perioperative mortality in selected cases. Preoperative NYHA functional class IV and ascites are associated with perioperative mortality. Timely surgery is recommended in this high-risk cohort of patients with tricuspid valve disease before the development of severe heart failure and end-organ failure.