5th World Congress on
Surgery
June 25-26, 2025 | Webinar
Volume : 21

Comparative Analyses Between Minimally Invasive Right Intercostal Parasternal Incisional Approach and Conventional Median Sternotomy Incisional Approach for the Aortic Valve Replacement Surgery

Sudhir Rajbhandari[1]*, Sheng Wang[1], Jingjing Hei[1], Jianchao Li[1], Shubo Song[1], Taibing Fan[1]

[1]Fuwai Central China Cardiovascular hospital (Central China Fuwai Hospital of Zhengzhou University), Zhengzhou, China.

Statement of the Problem: There are still conflicting views over minimally invasive right intercostal parasternal incisional approach and conventional median sternotomy incisional approach for the aortic valve replacement surgery.

Clinical Practice / Methods: A total of 102 adult patients who had aortic valve replacement from May 2020 to April 2022 were randomly divided into observation group and control group with 51 patients in each group. Patients in observation group had minimally invasive right intercostal parasternal incision while patients in control had conventional median sternotomy incision for aortic valve replacement. Preoperative basic data, intraoperative surgical indicators, and postoperative surgical results from both groups were comparatively analysed. All the enrolled patients were from single research center but came from different geographic regions and were of various ethnicities.

Results: No significant differences in basic preoperative data like gender, age, BMI, diagnosis of AV disease type, comorbidities, AV annular diameter, NYHA class of heart failure, 2-D echocardiographic indicators between two groups (P>0.05).

No significant differences in aortic cross-clamp time, cardiopulmonary bypass time, operation time length, whole blood transfusion volume, platelet transfusion volume, and cryoprecipitate transfusion volume between two groups (P>0.05). Transfusion volume of RBC and FFP were lower in observation group than control group (P<0.05).

No statistical difference in postoperative conditions like LA diameter, LVEF, LV diastolic diameter, LV systolic diameter, interventricular septum thickness, LV posterior wall thickness, incision infection, and perioperative death between two groups. Postoperative ventilation time, postoperative total drainage volume, postoperative hospitalization time, postoperative ICU stay, postoperative blood transfusion rate, drain-tube functioning time length were significantly shorter in observation group than control group (P<0.05).

Conclusion & Significance: Minimally invasive right intercostal parasternal incisional approach has far better patient outcomes compared to conventional median sternotomy incisional approach, thereby, provides enhanced recovery after surgery (ERAS) and can be swiftly discharged from hospital.

Biography

Dr. Sudhir Rajbhandari is currently associated with the Department of Cardiovascular and Thoracic Surgery, Fuwai Central China Cardiovascular Hospital (Central China Fuwai Hospital of Zhengzhou University), Zhengzhou city, Henan province, People's Republic of China. Currently, he is conducting hospital-based clinical research in the field of cardiovascular and thoracic surgery.

sudhir_fuwai_zzu@yeah.net

Abstract received : Feb 09, 2025 | Abstract accepted : Feb 11, 2025 | Abstract published : Dcember 15, 2025