Indian Journal of Basic and Applied Medical Research; June 2022: Vol.-11, Issue- 3 , P. 35 – 38
DOI: 10.36855/IJBAMR/2022/90215.55535

Original article:

Study of duration of cardiopulmonary bypass and perioperative outcome in valvular heart surgery: Retrospective study

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Abstract:

Introduction: The prevalence of valvular heart diseases is growing rapidly in low- and middle-income countries. The purpose of this study was to determine correlation of duration of cardiopulmonary bypass and perioperative outcome of valvular heart surgery outcome.

Methodology: We retrospectively reviewed data from adult patients undergoing valvular heart surgery during the past year. We performed a review of the medical, surgical, and intensive care records of consecutive elderly patients 18 years of age and older etc

Results: There were 82 males and 18 female, and the mean age at the survey was 56.1 ± 12.1 years. Diabetes was the most common diseases reported in 37 of patients. During surgery, 16 patients died. Of these patients, cardiac-related deaths were reported in 7 patients, 3 with sepsis, 3 with lung-related death, and 1 with neurological death. In some patients, the cause of death involved a single organ transplant. The exact cause of death was not specified in 2 patients. 6 patients required repeated cardiac surgery, and half of these patients underwent further surgery within the same surgical intervention (early reconstruction). Among the patients who died, only 2.2 and 1.5% were cases of early and late rehabilitation. Valvular heart surgery was performed at the same surgical site in 6 patients. In these patients, the mortality rate was 23.0%.

Conclusions: From present study, we strongly underline correlation of duration of cardiopulmonary bypass and perioperative outcome of valvular heart surgery outcome and we should take note of this relationship for better outcome.

Keywords: Heart surgery , aorta cross-clamp time, valve cardiac surgery, Valvular heart surgery

Introduction:

The prevalence of valvular heart disease is growing rapidly in low- and middle-income countries (LMIC) [1]. Urbanization and western diet and lifestyle are factors associated with an increased risk of heart disease [2, 3]. Occasional care for such patients is associated with greater use of health care services especially since extending the patient's stay in intensive care units and hospitals. [2]. Additional data is available about these side effects. Mitral valve repair has been suggested as providing a better postoperative outcome than valve replacement for mitral regurgitation, but this impression has been obscured by differences in baseline characteristics and has not been confirmed in multivariate analyses. [3 - 7]. The purpose of this study was to determine whether there was a

direct correlation between duration of cardiopulmonary bypass and perioperative cardiac outcome in valvular cardiac surgery.

Methodology:

This study was conducted in our department. Sample size is estimated by expert statistician. We retrospectively reviewed data from elderly patients undergoing valvular surgery during the past year.

Data were collected from pre- and post-surgical valvular surgery reports, medical records of the cardiovascular department, and internal reports of valvular surgery.

We collected demographic data, biological, clinical, surgical, echocardiographic, and angiographic data. Outcome data collected included perioperative complications and mortality.

We analysed 100 consecutive patient records as per sample size.

We performed a review of the medical, surgical, and intensive care records of consecutive elderly patients 18 years of age and older.

Results:

Table 1) Gender wise distribution

S.NO.	Gender	Number of cases
1	Male	82
2	Female	18

Table 2) Age wise distribution

S.NO.	Age range (Years)	Number of cases
1	20 -40	12
2	41-60	58
3	More than 60	30

Table 3) Associated complication wise distribution

S.NO.	Associated complications	Number of cases
1	Irregular BP	78
2	Diabetics	37

There were 82 males and 18 female, and the mean age at the survey was 56.1 ± 12.1 years. Irregular blood pressure and diabetes were the most common diseases reported in 74 and 37 of patients, respectively.

Table 4) Perioperative complications

S.NO.	Perioperative complications	Number of patients
1	Cardiac-related deaths	7
2	Sepsis	3
3	Lung-related death	3
4	Neurological death	1

During surgery, 16 patients died. Of these patients, cardiac-related deaths were reported in 7 patients, 3 with sepsis, 3 with lung-related death, and 1 with neurological death. In some patients, the cause of death involved a single organ transplant. The exact cause of death was not specified in 2 patients.

6 patients required repeated cardiac surgery, and half of these patients underwent further surgery within the same surgical intervention (early reconstruction). Among the patients who died, only 2.2 and 1.5% were cases of early and late rehabilitation.

Valvular cardiac surgery were performed at the same surgical site in 6 patients. In these patients, the mortality rate was 23.0%.

Discussion:

Perioperative complications in patients with valve coronary artery disease undergoing coronary artery bypass and their duration have been reported mainly from developed countries. We aim to report on clinical features and perioperative complications in patients with treated with valvular surgery at a tertiary hospital . (8) There were 82 males and 18 female, and the mean age at the survey was 56.1 ± 12.1 years. Diabetes was the most common diseases reported in 37 of patients. During surgery, 16 patients died. Of these patients, cardiac-related deaths were reported in 7 patients, 3 with sepsis, 3 with lung-related death, and 1 with neurological death. In some patients, the cause of death involved a single organ transplant. The exact cause of death was not specified in 2 patients. 6 patients required repeated cardiac surgery, and half of these patients underwent further surgery within the same surgical intervention (early reconstruction). Among the patients who died, only 2.2 and 1.5% were cases of early and late rehabilitation. Valvular surgery were performed at the same surgical site in 6 patients. In these patients, the mortality rate was 23.0%.(11)

In our study, the perioperative mortality rate is 11 %. Our mortality rate was significantly higher than the death rates reported in other developed and developing countries. In order to better understand the factors that cause this high mortality rate, the expected registration of results has begun, and this promises to inform us of our present mortality and morbidity consequences.

Conclusions:

From present study, we strongly underline correlation of duration of cardiopulmonary bypass and perioperative outcome of valvular heart surgery outcome and we should take note of this relationship for better outcome.

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