



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1288768>Available online at: <http://www.iajps.com>

Research Article

**OUTCOME OF PATIENTS WITH ACUTE LEFT
VENTRICULAR FAILURE AFTER CORONARY ARTERY
BYPASS GRAFTING**¹Dr. Saman Shahzad, ²Dr. Khadija Idrees, ³Dr Syed Haider Ali¹UHS Lahore²Hebei North University China³Services Hospital, Lahore**Abstract:**

Objective: To investigate the consequences of coronary artery bypass grafting (CABG) in patients with severe left ventricular dysfunction in a high-volume center in the Hospital.

Study Design: An Observational Study

Place and Duration: The study was performed in the Cardiac Surgery Department of Chaudhry Pervaiz Elahi Institute of Cardiology, Multan for the Period of One Year from August 2016 to August 2017.

Materials and Methods: 80 patients consecutively selected with severe left ventricular dysfunction (EF <35%) who underwent CABG and operated by the same surgical team were included in the study. Preoperative, intraoperative, and postoperative variables were recorded and analyzed using the Social Statistics Statistical Package in version 20.0 to determine hospital outcomes.

Results: The total number of patients was 80 (n = 80). The mean age was 61.80 ± 11.47. 32 patients (40%) were diagnosed with Canadian Class III or IV Cardiovascular Society. Eight patients (10%) had major coronary artery disease. Emergency CABG was performed in 8 patients (10%). Mean postoperative hospital stay was 8.32 ± 2.45 days. Acute kidney damage was observed in 4 (6%) patients postoperatively. Five (7%) cases applied to postoperative bleeding and three (4%) had a stroke after CABG. Hospital mortality was recorded in 3 out of 80 cases (4%).

Conclusion: CABG can be performed with morbidity and mortality acceptable to patients with severe left ventricular dysfunction.

Keywords: CABG, Mortality, Left ventricular dysfunction, Ischemic heart disease.

Corresponding author:**Dr. Saman Shahzad,**

UHS,

Lahore

QR code



Please cite this article in press Saman Shahzad et al., *Outcome of Patients with Acute Left Ventricular Failure after Coronary Artery Bypass Grafting*, Indo Am. J. P. Sci, 2018; 05(06).

INTRODUCTION:

The postoperative patients results with poor left systolic ventricular function (at least 35% of ejection fraction) have been corroborated by (CABG) coronary artery bypass surgery, the traditional high mortality and disease, despite the optimal cure for patients with low ejection fractions functioning severe left ventricular function the preferred treatment for patients is controversial, with less than 43% survival alone with medical treatment compared with 63% versus long-term prognosis because of medical revascularization remains survival 5 years after surgery. Although death-induced myocardial protection, perioperative pharmacologic maneuvers, and improvements in techniques for mechanical heart support decrease over the years, CABG remains a deafen severe left ventricular dysfunction patients. Heart transplantation is another option, but in a country and Pakistan, with a source of heart transplantation, remain the mainstay of CABG treatment, although there are many complications that remain an appropriate option for patients with left ventricular systolic dysfunction in CABG. In this study, we investigated CABG outcomes in patients with low ejection fraction in our patients in terms of the mortality and frequency of major complications in our hospital.

MATERIALS AND METHODS:

This is an observational study performed in the Cardiac Surgery Department of Chaudhry Pervaiz Elahi Institute of Cardiology, Multan for the Period of One Year from August 2016 to August 2017. Patients with ischemic coronary artery disease performed with bypass coronary artery surgery and had a severe three-vessel symptomatic disease with an ejection fraction of less than 35% were selected for the study. myocardial infarction was not obtained in patients with non-thallium-free live myocardium, patients with end-stage renal disease on maintenance dialysis, patients who had previous 24-hour and accompanying valve surgery. All information is compiled in a specially designed Proforma. The records of preoperative, intraoperative and postoperative variables were included and the follow-up period of discharge was continued until discharge. Two-dimensional transthoracic echocardiography was performed preoperatively in all patients and two days after surgery. Regional contractile function was assessed using a Vivid 7 echocardiography GE-Vingmed's second harmonic mode equipped with a 1.7 MHz transducer. The CABG pump was performed by the same surgical team during a mild cardiopulmonary hypothermic bypass. Myocardial preservation was given by intermittent perfusion of coronary with continuous topical hypothermia with

warm blood cardioplegia and cold saline. During the aortic cross clamping period distal anastomoses were performed. Using at least one internal mammary artery as a graft channel complete revascularization was attempted in all patients. Proximal venous anastomoses were performed when the patient was reheated. The sternotomy was closed in wound beds and transferred to the intensive care unit of the patients. clinical results in terms of postoperative complications were observed in all patients during the postoperative hospital stay. , and acute renal damage, defined as a serum creatinine (stroke was diagnosed post-operatively (no evidence of new neurological deficit with morphological substrate confirmed by computerized tomography or magnetic resonance imaging) ≥ 2 mg / post-operative dL) and again (criteria defined by Kirklin and Barratt-Boyes) were recorded until the sixth patient was discharged.

STATICAL ANALYSIS

Statistical analysis was done using the SPSS system for Windows (version 20.0, SPSS. Continuous variables are given as \pm SD (standard deviation) in mean, while categorical variables are expressed as percentage and frequency.

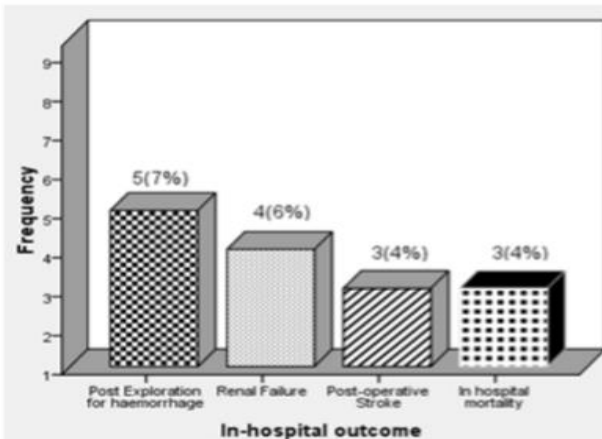
RESULTS:

The results (Table 1) showed that 48 (60%) of 80 patients were male and 32 (40%) were female. The mean age of patients with CABG and LV dysfunction was 61.80 ± 11.47 .

Table-1: Demographic and clinical characteristics of CABG Patients with severe LV Dysfunction

Variable		Mean \pm SD/%
Age		61.80 \pm 11.47
LVEF (%)		30.86 \pm 3.58
Gender	Male	48 (60%)
	Female	32 (40%)
Current/ex-smoker		61 (77%)
Diabetes mellitus		28 (35%)
hypertension		44 (54%)
LMCAD		8 (10%)
CCS class III or IV		32 (40%)
Emergent surgery		8 (10%)
Number of grafts		3.41 \pm 1.23
Cross-clamp time (min)		71.11 \pm 31.07
Cardiopulmonary bypass time (min)		100.32 \pm 21.63
Postoperative hospital (days)		8.32 \pm 2.45

Smoking is a common risk factor, with 44 (54%) of hypertension and 28 (35%) of diabetes mellitus less risk factors. In 40% of patients with left ventricular dysfunction, the severity of angina CCS class III or IV was observed. The mean number of graft implants per patient was 3.41 ± 1.23 . Mean cardiopulmonary bypass time was 100.32 ± 21.63 minutes, mean aortic cross clamp time was 71.11 ± 31.07 minutes and mean postoperative duration was 8.32 ± 2.45 .

Figure-1: In hospital outcome in CABG Patients with severe LV Dysfunction

Hospital dysfunction in these patients (Figure 1) was postoperative exploration of hemorrhage.(7%)

patients (6%) had renal insufficiency postoperative stroke and mortality was 4%.

DISCUSSION:

Thrombolytic therapy due to severe IHD prevalence is high for joint use of angioplasty and stenting, and delay surgery until the disease progresses coronary artery; Hence, patients with CABG have shown that our results were found to be previamente.7 more risky LV dysfunction is more common in men. Our results showed that the risk of LV dysfunction (69% vs 29%) was 8. more frequent in men with dysfunction in the other study by Nishi et al. In the study of Filsoufi and colleagues, comparable VI males were higher than females (64.28 vs 35.71%). 9 This study showed similar results. Wang10 et al found that there were some more LV dysfunctions compared to males (47.72 vs. 52.27%). These conflicting results may be due to a bias in the selection of female patients. This study provided evidence that patients had older (61.80 ± 11.47 years) and a greater risk factor, smoking (77%), diabetes mellitus (35%) and hypertension (54%). Davoodi11 and colleagues showed significant diabetic (36.6) patients with CABG with hypertension (53.0%), similar age (58.02 ± 9.40 years) with significant left ventricular depletion (20.4%), and ejection fraction (LVEF). Nishi et al. At the same time, patients with CABG with high blood pressure (60%) and left ventricular ejection fraction (LVEF) were reported to have a significant reduction in diabetes mellitus (70%) and risk factors (66.0 ± 9.3 years).

Khan12 et al. Smoking, diabetes mellitus (58%) and hypertension (73.7%): They also had a mean age of 58.4 ± 9.5 years with left ventricular dysfunction and were found to be a major risk factor. Ascione 13 et al. He also reported hospital mortality from 3% to 7% in patients with EF <30%. A mortality rate of 4.7% was examined in patients with Khan12 EF <30%. Postoperative mortality rate was 4% in our study and the rate was similar to that reported in previous studies. Wu 14 et al. Saxena 15 et al. And Di Carli 16 et al. In patients with EF <30%, postoperative mortality was 9.9% for 30 days and 9.3% for 9.3%, respectively, and Davoodi11 et al. And Nishi et al. 2.4% mortality in patients with EF is 30%, depending on different environmental factors and comorbid conditions. Shapira OM17 et al. They reported a mean postoperative hospital stay of 8 days in patients with left ventricular systolic dysfunction. Our study showed an average of 8 days hospitalization postoperatively. Surgery and Wu14 et al found patients with left ventricular dysfunction to remain in the hospital for a long time after a mean follow-up of 2 days post-surgery 12 days postoperatively

(Alderman et al., 2000) and patients with impaired left ventricular dysfunction after mean CABG (25 days).

This study showed different results due to the small size of the sample. Hillis 18 et al. They showed that acute kidney injury after CABG is an independent mortality indicator. Topkaral and colleagues found that postoperative ACI was 4% in patients with EF <30%. Shapira OM17 et al. They found 5.2% postoperative vascular events in patients with LV <30%. Saxena 15 et al. They reported outbreaks and postoperative bleeding scans in patients with severe left ventricular dysfunction with 4.2% and 5.6%, respectively. It can be concluded that CABG can be performed with acceptable mortality and morbidity in patients with severe left ventricular dysfunction. We believe that even patients with poor left ventricular function and coronary disease-sensitive grafts, and left ventricular akinetic or dyskinetic regions, all patients will benefit from surgery. delayed CABG is a dynamic process of early surgery and winter sleep is evident, patients with live myocardium should be considered early revascularization, showed higher mortality than those who have evidence.

CONCLUSION:

CABG is well tolerated in patients with severe left ventricular dysfunction and can be treated with acceptable morbidity and mortality. 80 patients consecutively selected with severe left ventricular dysfunction (EF <35%) who underwent CABG and operated by the same surgical team were included in the study. Preoperative, intraoperative, and postoperative variables were recorded and analyzed using the Social Statistics Statistical Package in version 20.0 to determine hospital outcomes. The total number of patients was 80 (n = 80). The mean age was 61.80 ± 11.47 . 32 patients (40%) were diagnosed with Canadian Class III or IV Cardiovascular Society. Eight patients (10%) had major coronary artery disease. Emergency CABG was performed in 8 patients (10%). Mean postoperative hospital stay was 8.32 ± 2.45 days. Acute kidney damage was observed in 4 (6%) patients postoperatively. Five (7%) cases applied to postoperative bleeding and three (4%) had a stroke after CABG. Hospital mortality was recorded in 3 out of 80 cases (4%).

REFERENCES:

1. Head, Stuart J., Milan Milojevic, Joost Daemen, Jung-Min Ahn, Eric Boersma, Evald H. Christiansen, Michael J. Domanski et al. "Mortality after coronary artery bypass grafting versus percutaneous coronary intervention with

stenting for coronary artery disease: a pooled analysis of individual patient data." *The Lancet* 391, no. 10124 (2018): 939-948.

2. Wadey, Kerry, Joshua Lopes, Michelle Bendeck, and Sarah George. "Role of smooth muscle cells in coronary artery bypass grafting failure." *Cardiovascular research* 114, no. 4 (2018): 601-610.
3. Ebrahimi, R., Gupta, S., Carr, B.M., Bishawi, M., Bakaeen, F.G., Almassi, G.H., Collins, J., Grover, F.L., Quin, J.A., Wagner, T.H. and Shroyer, A.L.W., 2018. Comparison of Outcomes and Costs Associated with Aspirin+/- Clopidogrel after Coronary Artery Bypass Grafting. *The American Journal of Cardiology*.
4. Bakaeen, Faisal G., Eugene H. Blackstone, Gösta B. Pettersson, A. Marc Gillinov, and Lars G. Svensson. "The father of coronary artery bypass grafting: Rene Favaloro and the 50th anniversary of CABG." (2018).
5. Weymann, Alexander, Sadeq Ali-Hasan-Al-Saegh, Aron-Frederik Popov, Anton Sabashnikov, Seyed Jalil Mirhosseini, Tong Liu, Gary Tse et al. "Haematological indices as predictors of atrial fibrillation following isolated coronary artery bypass grafting, valvular surgery, or combined procedures: a systematic review with meta-analysis." *Kardiologia Polska (Polish Heart Journal)* 76, no. 1 (2018): 107-118.
6. Hashemi, N., Brodin, L.Å., Hedman, A., A Samad, B. and Alam, M., 2018. Improved right ventricular index of myocardial performance in the assessment of right ventricular function after coronary artery bypass grafting. *Interactive cardiovascular and thoracic surgery*.
7. Gaudino, M., Di Franco, A., Rahouma, M., Tam, D.Y., Iannaccone, M., Deb, S., D'Ascenzo, F., Abouarab, A.A., Girardi, L.N., Taggart, D.P. and Frenes, S.E., 2018. Unmeasured confounders in observational studies comparing bilateral versus single internal thoracic artery for coronary artery bypass grafting: a meta-analysis. *Journal of the American Heart Association*, 7(1), p.e008010.
8. Gahl, B., Göber, V., Odutayo, A., Stahel, H.T.T., da Costa, B.R., Jakob, S.M., Fiedler, G.M., Chan, O., Carrel, T.P. and Jüni, P., 2018. Prognostic Value of Early Postoperative Troponin T in Patients Undergoing Coronary Artery Bypass Grafting. *Journal of the American Heart Association*, 7(5), p.e007743.
9. Butt, J.H., Sørensen, R., Bäck, C., Olsen, P.S., Thorsteinsson, K., Torp-Pedersen, C., Gislason, G.H., Køber, L. and Fosbøl, E.L., 2018. Short- and long-term cause of death in patients undergoing isolated coronary artery bypass

- grafting: A nationwide cohort study. *The Journal of thoracic and cardiovascular surgery*.
10. Russo, Juan J., Tyler E. James, Marc Ruel, Jean-Yves Dupuis, Kuljit Singh, Daniel Goubran, Nikita Malhotra et al. "Ischemic and bleeding outcomes after coronary artery bypass grafting among patients initially treated with a P2Y12 receptor antagonist for acute coronary syndromes: Insights on timing of discontinuation of ticagrelor and clopidogrel prior to surgery." *European Heart Journal: Acute Cardiovascular Care* (2018): 2048872617740832.
 11. Mariscalco, Giovanni, Stefano Rosato, Giuseppe F. Serraino, Daniele Maselli, Magnus Dalén, Juhani KE Airaksinen, Daniel Reichart et al. "Prior Percutaneous Coronary Intervention and Mortality in Patients Undergoing Surgical Myocardial Revascularization: Results From the E-CABG (European Multicenter Study on Coronary Artery Bypass Grafting) With a Systematic Review and Meta-Analysis." *Circulation: Cardiovascular Interventions* 11, no. 2 (2018): e005650.
- Vuurmans, T., Er, L., Sirker, A., Djurdjev, O., Simkus, G. and Levin, A., 2018. Long-term patient and kidney survival after coronary artery bypass grafting, percutaneous coronary intervention, or medical therapy for patients with chronic kidney disease: a propensity-matched cohort study. *Coronary artery disease*, 29(1), pp.8-16.