Original Article

Frequency of ischemic as compare to hemorrhagic stroke and quality of life after receiving cardiac rehabilitation Phase I and II

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Objective: To determine the frequency of ischemic as compare to hemorrhagic stroke after receiving cardiac rehabilitation Phase I and II and to determine the quality of life in stroke patients.

Methodology: This comparative cross-sectional study was conducted in Armed Forces Institute of Cardiology (AFIC), Rawalpindi on 50 post op cardiac patients. Patients who had stroke after Post op cardiac surgeries with age of 40 to 60 years were included in the study. Patients with stroke without history of cardiac surgeries or cardiac disease were excluded. Demographics were recorded through a semi structured questionnaire. Quality of life was measured by CDC HRQOL-14 including 20 close ended questions regarding frequency of stroke after cardiac surgery participation in phase I and phase II cardiac rehabilitation.

Results: Out of 50 patients, 17(34%) had hemorrhagic stroke and 33(66%) ischemic stroke. The onset of stroke was <3 months in 6(12%) patients, while 44(88%) had stroke between 3 months to 1 year. CDC HRQOL-14 showed those who had stroke after receiving phase I and II were 21(42%) fairly with good condition while patients who received only phase I were 29 (58%) had poor health status.

Conclusion: The frequency of ischemic stroke is higher in patients receiving cardiac rehab Phase I with poor health status as compared to those who received both phases I and II. (Rawal Med J 202;46:300-302).

Keywords: Stroke risk, cardiac surgeries, cardiac rehabilitation.

INTRODUCTION

Stroke is defined by the WHO as a clinical syndrome that develop signs and symptoms due to the disruption in the cerebral blood flow.[1] Globally, stroke is the fourth leading cause of mortality and the most common reason of weakness and disability in body.[2] Many patients have stroke during surgery and some experience it after major surgeries. Patient have major stroke due to plaque formation or inflammation of the injure site.[3] The incidence of stroke is varied according to different types of surgeries; there being higher incidence after CABG, aortic valve surgery, mitral valve surgery, double or triple valve surgery.[41]n percutaneous coronary artery intervention and carotid artery stenting which are potentially less invasive, there is less hospital stay and risk of stroke is also remarkably less.[5] With or without preexisting ischemic heart disease, risk of stroke is significantly reduced by moderate physical activity.[6]

After cardiac surgeries, risk of stroke is reduced by cardiac rehab physical therapy which is a conservative treatment.[7] Physical activity and some standard exercise like aerobics also reduce the risk of stroke and other complication of post cardiac surgeries. Physiotherapy interventions, using mix component of different approaches are used for stroke after cardiac surgeries. Cardiac rehabilitation has its four phases in which patients improve cardiovascular endurance and quality of life is also improved.[8] The purpose of this study was to determine the increase stroke risk in patients with cardiac surgeries if they undergo phase-I or phase-II rehabilitation.

METHODOLOGY

This comparative cross-sectional study was conducted in AFIC, Rawalpindi on 50 post op cardiac patients. Patients who had stroke after Post op cardiac surgeries were included with age of 40 to 60 years. While patients who had stroke without having history of cardiac surgeries or cardiac disease were excluded.

Demographics were recorded through a semi structured questionnaire. The quality of life was

measured by CDC HRQOL-14 including 20 close ended questions regarding frequency of stroke after cardiac surgeries, participation in phase I and phase II cardiac rehabilitation (as per conventional protocol by AFIC.

Statistical Analysis: All data analysis was performed using SPSS Statistics 21.

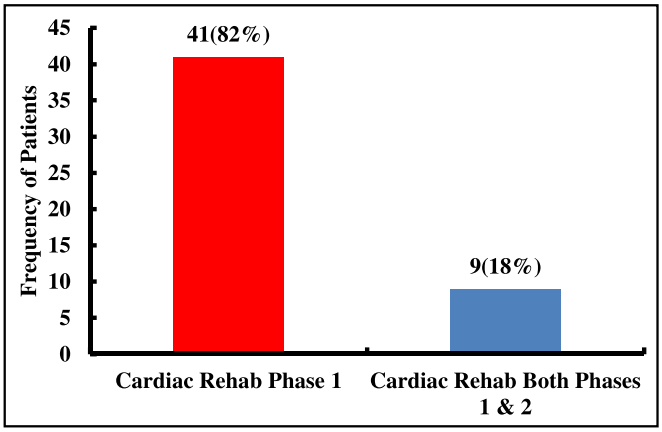
RESULTS

Out of 50 patients, 17(34%) had hemorrhagic stroke and 33(66%) had ischemic stroke (Table). Mean age of the patients was 51.6±6.8 years. Six (12%) patients had stroke after 3 months of cardiac surgeries and 44(88%) had between 3 months to 1 year post op cardiac surgeries. It was found that patients presented with stroke were receiving both phase I and II of cardiac rehabilitation.

Table. Cardiac Rehab Phase I & Phase II with Stroke.

Rehab plan	Ischemic Stroke	Hemorrhagic Stroke	p-value
Phase-I and Home plan	33(66%)	8(16%)	
Both Phase I and II	0	9 (18%)	<0.001

Fig. Frequency of stroke patients with cardiac rehabilitation.



Chi square test showed statistically significant association ($p<0.001$) as seen in the Table. According to CDC HRQOL-14, general health status or quality of life of the cardiac patients who had stroke after receiving phase I and II were 21(42%) fairly with good condition while patients who receives only phase I were 29 (58%) reported with poor health status. (Fig.)

DISCUSSION

A study was done by Azam et al concluded that post-operative atrial fibrillation and requirement of high dose inotropic support after weaning from CABG were the most powerful predictor of post-operative stroke.[9] We found there is great prevalence of ischemic stroke in post op cardiac patients. Gaudino et al reported that there is a 1% threat for both early and delayed stroke after cardiac surgical treatment. Early stroke isn't always related to any patient-degree risk factors, suggesting a technical motive, and is related to a significant growth in operative mortality as well as reduction in long-term survival.[10]

Haider et al found that ischemic stroke was a rare yet devastating complication which could arise following cardiothoracic surgery and fibrinolytic treatment was contraindicated because of increased hazard for hemorrhage.[11] We found that there was less prevalence of hemorrhagic stroke in post op cardiac patients. Moreira and Grilo concluded that it is of maximum importance to insist on fitness education, supervised exercise, early mobilization, respiratory physical games at some point of the preoperative and postoperative periods during hospitalization and positively influencing physical, social and mental function.[12]

Kirk et al conducted a study in 2014 and showed that general cardiac rehabilitation programs were a feasible and effective means of lowering the risk of future cardiovascular events for sufferers after minor stroke and transient ischemic stroke.[13] Dos Santos et al reported that center-based supervised CR enhanced practical ability after coronary revascularization, community-based CR applications were feasible, improve patient compliance in physical activity, and thereby growth purposeful ability.[14]

Quality of life after phase I was improved but after completing the all phases of rehabilitation shows greater improvement.[14] Similarly, another study showed same results as Francis et al in concluded that receiving CR was proven to enhance HRQOL, with workout, no exercise, and psychological-primarily based interventions playing a crucial role.[15]

CONCLUSION

This study concluded that the frequency of ischemic stroke is higher in patients receiving cardiac rehab Phase I with poor health status as compared to those who received both phases I and II.

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