Cardiac Rehabilitation during COVID-19 – an eye opener

Introduction

The global COVID19 pandemic has led to significant morbidity and mortality to millions of cardiac patients across the globe. Inferior clinical standards, modified clinical pathways and limited hospital resources has unfortunately translated to significant premature cardiac deaths. Cardiac rehabilitation has also been hit significantly. Team members were deployed to other areas. Public health restrictions stalled educational and physical activity sessions. Adherence rates dropped. All these factors have unfortunately left a negative impact on cardiac rehabilitation services.

Study Objectives

The aim of this study was to assess the impact of cardiac rehabilitation during COVID-19, comparing the referral, adherence and outcomes with patients admitted a year previously.

Methodology

All patients admitted between March 2019 to February 2022 were reviewed. The cohort was divided into two groups. The pre-COVID-19 subgroup (Group 1) was defined as patients admitted before March 2020. The post-COVID-19 subgroup (Group 2) was defined as patients admitted between March 2020 to March 2021. Adherence to the cardiac rehabilitation exercise training program was defined as adherence to ≥6 sessions (Group 1) or ≥ 4 sessions (Group 2). Data was collected from electronic case summaries and cardiac rehabilitation unit medical records. Data was tabulated in SPSS v23. Categorical variables were presented as percentages. Statistical analysis was computed with SPSS v23. A p value of <0.05 was deemed statistically significant.

Results

1642 patients were admitted with a cardiac diagnosis, mean age 66.85 ± 12.62 years, dominant male population (n=1249, 76.1%). 871 (53.0%) were admitted before March 2020. 771 (47.%) were admitted between March 2020 and February 2021.

Baseline characteristics for both groups were rather comparable (mean age 66.77±12.54 vs 66.95±12.70 years [p=0.778], males 78.3% vs 73.5% [p=0.046], Diabetes Mellitus 35.8% vs 36.1%, [p=0.559], Hypertension 68.4% vs 64.9% [p=0.140], Hyperlipidaemia 48.1% vs 38.0% [p<0.001], Previous CAD 42.4% vs 44.0, [p=0.472], smokers 53.2% vs 51.6% [p=0.821]).

The referral rate to cardiac rehabilitation was rather poor in both groups with no statistically significant difference (Pre COVID 32.5% vs 28.7%, p=0.090). Adherence to the exercise program was again poor in both groups, with no difference between time frames (9.9% vs 11.2%, p=0.821). The completion rate was also unfortunately quite low (Pre COVID 10.3% vs Post COVID 10.7%, p=0.105).

The 1 year readmission rate was significantly higher in Group 1 (Pre COVID 19.2% vs Post COVID 9.1%, p<0.001), possibly because patients were more open to seek medical advice before the pandemic. The 30 day death rate was comparable in both groups (3.0% vs 3.0%, p=0.991).

The 1 year mortality was lower in those who adhered to cardiac rehabilitation (1.7% vs 8.9%, p<0.001). The readmission rate was comparable in those who were fully adherent to the rehabilitation program compared to the rest (15.0% vs 9.9%, p=0.07).

Conclusion

The 30 day mortality for patients admitted during the pandemic was comparable with the previous year. The referral and adherence rate were also poor in both groups. The 1 year readmission rate was higher in patients admitted before COVID, possibly explained by patients being more inclined to seek medical advice. Adherence to cardiac rehabilitation led to a lower mortality and readmission rate.