

Euro Heart Congress 2020: The effect of Atrial / Ventricular Fibrillation in patients with Heart Failure: A prospective observations study at a tertiary care center

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Abstract

Introduction:

Heart failure (HF), previously called congestive heart failure, is a serious condition most commonly caused by weak pumping of the heart muscle. Arrhythmia is a common finding in heart failure (HF) patients. It has a greater impact on prognosis in those patients, especially atrial fibrillation arrhythmia type.

The most common cardiovascular conditions that are encountered in clinical practice and frequently coexist are Heart failure (HF) and atrial fibrillation (AF). Heart failure can be considered as a measure to predict the development of AF and conversely the presence of AF in an individual can also predict the development of HF at later stage. The prevalence of Heart failure in the society has reached the proportions of a global epidemic with an estimated prevalence of 3-20 cases in a 1000 whereas population raising to above 100 cases per 1000 population in elderly people those aged over 65 years. Also the annual incidence rate of heart failure in middle aged men and women which was 0.1-0.2 % has been rising steadily to 2-3 % in those aged above 85 years.

The most common sustained arrhythmia seen in clinical practice recorded is atrial fibrillation. The studies done by Framingham as well as the Rotterdam have estimated around 25% lifetime risk of developing AF. The studies show that only in the United States the prevalence of AF is estimated between 2.7 to 6.1 million, which is expected to rise to between 5.6 and 12 million. The prevalence in the Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) according to a study predicted that it will rise 2.5 times by 2050. The incidence is expected to rise steeply with the age, rising to an estimated of value 17.4% surge in those above 85 years of age. Similar to Heart Failure, AF also carries an enormous burden of morbidity, mortality and healthcare costs.

Objective:

The study aimed to evaluate the effect of arrhythmia on the mortality & morbidity among heart failure patients.

Methods: Methods were conducted to analyse the effect of atrial / Ventricular Fibrillation on patients with Heart Failure: A prospective observational study at a tertiary care center, study data was collected from period of November to January 2018.

This study was divided primarily into two groups, first group consists patients diagnosed with heart failure & the second group is the controlled group (HF + arrhythmia). Studies showed that AF was associated with an increased risk for all-cause mortality in comparison to those in sinus rhythm (34% vs. 23%), this was done using retrospective analysis of the studies of Left Ventricular Dysfunction (SOLVD) by Dries et al. (involving 6517 patients with LVEF of less than 35%). The studies on the subjects were also applicable to asymptomatic as well as symptomatic patients and mainly attributable to an increased risk of pump failure deaths. Similarly the investigators of Candesartan in Heart Failure Assessment of Reduction in Mortality and Morbidity (CHARM) explained and showed an increased and independent effect of AF on cardiovascular outcomes in patients with either reduced or preserved LV systolic function. However both the above traditional analyses are limited by the fact that data for these studies were derived from the analysis of subgroup. The Potential and prospective data from Stevenson et al. looked and analysed the influence of Atrial Fibrillation on all-cause mortality in 390 patients with advanced systolic heart failure. After many observations and discussions the conclusion was that AF is an independent predictor of all-cause mortality (actuarial survival at 1 yr with AF 52% vs. 71% with sinus rhythm). However interestingly, atrial fibrillation was associated with increased 1-year mortality only in patients with a pulmonary capillary wedge pressure lower than 16mmHg rather than the ones with higher filling pressures suggesting that the relative risk of sudden death is highest in patients with relatively better ventricular function as compared to patients with more advanced ventricular dysfunction.

A number of modalities related to non-pharmacological methods are in clinical use for the management of AF in daily basis. Anti-arrhythmic drug therapy for the management of AF may in itself increase adverse cardiac events. The trial patients with AF-CHF who were monitored in the rhythm control arm were more frequently hospitalized for dosage readjustment and cardio version especially in the first year. Furthermore, many patients are unable to achieve rhythm or rate control targets due to inadequacy of the drugs or side effects. Consequently, use of electrophysiological interventions to achieve this aim is increasing. AV nodal (AVN) ablation accompanied by a permanent pacemaker is often a last resort option for definitive AF rate control when medical therapy to achieve this has failed. This treatment strategy may only be of symptomatic benefit since AF is not eliminated and deleterious

effects of A-V dyssynchrony and loss of atrial transport still persist. While atrial lead placement and chronic atrial pacing has not shown any benefit in reducing AF recurrences, chronic RV pacing leads to progressive LV dysfunction due to inter-ventricular desynchronisation. As a result, upgrade to biven-tricular pacing has been suggested as a promising option provided it can be ensured that the device is pacing nearly 100% of the time for maximum benefit.

Results:

A total 200 participants, most of the respondents were males 153 (76.5), more participants were have 2 risk factors & highest one is HTN (Hypertensive)149(74.5%), interventionist procedure used among our patients were PCI for both patients have one or more interventions 99(49.3%) ,most of patients with ICD(Implantable Cardioverter Defibrillator) 90(44.8%), most type of arrhythmia atrial fibrillation 71 (35.5), a majority of NHYIA class(New York Heart Association) is class I 137 (68.16), the most symptom palpitation 176(87.56%) , ejection fraction in were patients 30% with total 52(25.87%) & highest medication used is beta-blocker185(92.04%).

Conclusions:

Arrhythmias one of most factors cause of heart failure disease. AF(atrial fibrillation) is the most common arrhythmia in HF, AF prevalence and its associated complications have been well studied in established HF. Clinical management of HF needs to take into account the high risk of arrhythmias among these patients. Also to be noted that HF and AF frequently co-exist and the presence of Atrial Fibrillation in patients with HF has been reported to be independently associated with an increase in mortality in many studies and the studies show that this increased risk is observed in patients with both preserved and impaired LV systolic function. Despite the fact that many studies have shown that the presence of AF in HF patients is associated with an adverse prognosis, most studies that have targeted AF in patients with HF with a view to maintaining SR have shown no noteworthy improvements in outcomes compared to those patients in which a rate control strategy has been adopted.

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