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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/13962

DOI URL: <http://dx.doi.org/10.21474/IJAR01/13962>



RESEARCH ARTICLE

CLINICAL PROFILES OF PATIENTS UNDERGOING PACEMAKER IMPLANTATION

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Manuscript Info

Manuscript History

Received: 20 October 2021

Final Accepted: 24 November 2021

Published: December 2021

Key words:-

Clinical Profile, Pacemaker & Bradyarrhythmias

Abstract

Background and Objective: The implantation of a permanent cardiac pacemaker for the treatment of bradyarrhythmia is one of the most popular cardiac interventions. The goal of this study is to look at the clinical profiles of individuals who have permanent pacemakers implanted

Material and Methods: The study was conducted using observational methods. The study included patients who received a permanent pacemaker for bradyarrhythmias between November 2019 and November 2021. A thorough review of the demographic profile and indications was performed.

Results: The vast majority of the 312 patients were older, with the majority being between the ages of 56 and 88 years old (75 %). Pacemakers were implanted in more men than in women. Complete heart block was the most common ECG finding and the most common presenting symptom was syncope. The most prevalent sign of pacing was acquired A-V block, and the most common pacemaker mode was single chamber (VVI/VVIR).

Conclusion: Acquired A-V block and SSS were found to be the most common reasons for pacemaker implantation in our study. Higher implantation rates were linked to advanced age and male gender.

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Introduction:-

Permanent pacemaker implantation is currently one of the most widely used therapeutic or preventative techniques in the treatment of individuals with heart problems.¹ Arrhythmia, cost effectiveness, and longevity all play a role in determining whether a single or dual chamber pacemaker is the best option.² However, there have been significant variances in the frequency of pacemaker implantation and the system chosen.^{3,4} Although there are many studies in the Western literature describing the clinical profile of patients undergoing pacemaker implantation, there are few studies from Asia, hence we did a study to analyse the clinical profile of patients undergoing pacemaker implantation.

Aims and Objectives:-

To investigate the clinical characteristics of people who have a permanent pacemaker implanted.

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Study Design:

Observational Study

Material and Methods:-

This was an observational research project. Patients who received a permanent pacemaker in accordance with the ACC/AHA/HRS Guidelines for Device-Based Cardiac Rhythm Therapy The study looked at bradyarrhythmias from November 2019 and November 2021, and looked at age, sex, symptoms, ECG findings, echocardiography, diagnosis, indication for pacemaker placement, pacemaker mode, and comorbidities. Patients with reversible bradyarrhythmias, drug-induced bradycardia, electrolyte imbalance-induced bradyarrhythmias, patients who refused to participate in the study, and patients who were undergoing revision implantation were all excluded from the study. Continuous data are expressed as the mean value \pm 2 standard deviations. Percentage analysis was used to describe distribution of demographic variables.

Results:-

Table 1 shows the characteristics of study participants.

Table 1:- Baseline Characteristics (N=312).

Characteristic	Mean, (Range)
Age (Years)	64.71, SD 14.75, (04-88)
Sex	No. (%)
Male	200 (64.10)
Female	112 (35.89)
Type of Pacemaker	
Single chamber pacemaker (VVI/VVIR)	213 (68.26)
Double chamber pacemaker(DDD/DDDR)	92 (29.48)
VDD/VDDR	7 (2.24)
Indication for Pacemaker Implantation	
1.Acquired A-V block	256 (82.05)
(1.A) Complete heart block(CHB)	213 (68.26)
(1.B) Symptomatic high grade A-V block	43 (13.78)
2.Sick sinus syndrome(SSS)	50 (16.02)
3. Permanent pacing in children	6 (1.92)
Clinical Symptoms	
H/O Syncope	213 (68.26)
fatigue	168 (53.84)
Lightheadedness	112 (35.89)
Palpitation	54 (17.30)
Dyspnea	53 (16.98)
Angina	24 (7.69)
Comorbidities	
Hypertension	244 (78.20)
Addiction	
Tobacco (Current)	60 (19.23)
Tobacco (Former)	80 (25.64)
Alcohol (Current)	18 (5.76)
Alcohol (Former)	23 (7.37)

Discussion:-

Our research looked at the clinical characteristics of patients who had pacemakers implanted a. 256 (82.05 %) of the 312 patients in our study had acquired AV block, with 213 (68.26 %) having complete heart block (CHB) and 43 (13.78 %) having symptomatic high grade AV block. In our analysis, acquired AV block was the most common reason for pacemaker implantation, possibly due to the poor prognosis associated with it, whereas SSS has no effect

on life expectancy. In a retrospective analysis, Mayosi et al found that atrio-ventricular block (62 %), sick sinus syndrome (25 %), and miscellaneous group were the most common ECG reasons for pacing (13 %).⁵ In a retrospective analysis of 546 elderly individuals, Brady et al discovered that A-V block (52 %) and sick sinus syndrome were the most common reasons for pacing (48 %).⁶ According to Uslan et al, 55.2 % of permanent pacemaker receivers experienced atrioventricular block, 22.8 % had sinus node dysfunction, and 10% had bilevel conduction defect (atrioventricular block and sinus node dysfunction).⁷ Our study's youngest patient was four years old, and the study's average age was 64.71 ± 14.75 years. The vast majority of patients (75%) were between the ages of 56 and 88. Previous investigations have found similar outcomes.^{8,10,11} Eighty two percent patients were symptomatic at presentation and syncope (68.26%) being the most prevalent symptom; results were comparable to prior research.⁸ Hypertension was the most common associated co-morbidity (78.20 %), while diabetes individuals made up 23.07 % of the patients, which is consistent with earlier research. Single chamber (VVI/VVIR) pacemakers were implanted in 17 of the 68.26% of patients. The pacemaker was implanted with two chambers (DDD/DDDR). in 29.48% of patients. Financial constraint was the major factor for single chamber pacemaker implantation. Chauhan et al. performed a study on a total of 2019 patients who underwent new pacemaker implantation, and of the total, 1733 patients (85.8%) received a VVI pacemaker and 286 (14.2%) a DDD pacemaker.^{12,13,14,15}

Conclusion:-

A total of 312 patients had pacemakers implanted; the most prevalent reason was acquired A-V block. The most often implanted pacemaker mode was single chamber (VVI/VVIR). The majority of the patients had bradyarrhythmias, with syncope being the most common symptom. Higher implantation rates were linked to advanced age and male gender.

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