

# The Importance of Selecting Permanent Pacemaker, Evaluating the Heart and Assessing Quality of Life in Cardiac Patient

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The use of pacemakers is necessary for patients with symptomatic bradycardia. Pacemaker implantation also acts as a life-saving procedure. However, there are several reports that patients with a pacemaker (the most widely used pacemaker is on the right ventricle, known as single chamber pacemaker) had disturbances in left ventricle contraction lead to left ventricular systolic dysfunction. Global Longitudinal Strain (GLS) Echocardiography can confirm these left ventricular disturbances. Echocardiography examination is best carried out before and after single-chamber permanent pacemaker (PPM) implantation. This study compares PPM placement in apical Right Ventricle (RV) and Right Ventricular Outflow Tract (RVOT) and compares paced QRS duration 150 ms and > 150 ms. Pacing burden >40% causes subclinical left ventricular systolic dysfunction after a month of PPM implantation with decreased GLS in apical RV pacing.<sup>1</sup>

This study gives additional information that PPM placement is preferably in RVOT with some specific settings. However, there are many ways to reduce impaired left ventricular function due to lead installation on the PPM single-chamber device. Using the PPM device with a dual chamber, the leads will be placed in RVOT and also in the right atrium with atrial-ventricle synchronization. The aim is to avoid impaired left ventricular pump function<sup>2</sup> as supported by a systematic review which states the superiority of dual-chamber PPM over single-chamber PPM

in reducing atrial fibrillation and pacemaker syndrome.<sup>3</sup>

A retrospective study found that regardless of PPM type in subjects with an EF >40%, there was no significant difference in long-term outcome between those with AV block or sinus node disease as etiologies of bradycardia. Otherwise, this study did not report the PPM lead position.<sup>4</sup>

In the importance of quality of life related to heart disease, the Indonesian version of the MacNew questionnaire can be used. This questionnaire assesses the quality of life of patients with coronary heart disease after revascularization surgery and who has undergone rehabilitation. The results were compared with the Indonesian version of the SF36 questionnaire, using Pearson's correlation, with  $r = 0.47 - 0.71$ . The researchers considered the Indonesian version of the MacNew questionnaire to have good validity and reliability.<sup>5</sup> One of the challenges researchers face is the subject's understanding of the questionnaire, as there must be a common understanding of the questions. Another important thing is the suitability of the adaptation to the original English version.

## REFERENCES

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