

Determinants of Distance Walked during The Six-minute Walk Test in Patients Undergoing Valve Surgery in National Cardiovascular Center Harapan Kita, Indonesia

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Abstract

Background: A simple and efficient method to directly assess the functional capacity of the patient in the postoperative period of cardiac surgery is through six-minutes walk test (6MWT). Distance ≥ 300 meters covered in the 6MWT is a predictor of increased survival at 5 years of follow up in elderly patients undergoing cardiac surgery. It is known that the use of 6MWT is growing in popularity undergoing cardiac surgery, but the determinant of 6MWT distance in a specific cardiac surgery such as valve surgery is still unclear. The aim of this study was to identify the determinant of distance walked 6MWT in patients undergoing valve surgery.

Methods: This is analytic cross-sectional study. Data were taken at prevention and rehabilitation division in National Cardiovascular Center Harapan Kita, Jakarta, Indonesia from 2013-2016 who underwent valve surgery. 6MWT was performed within 15 days after discharge. Patients who presented with the muscular or neurological disorder were excluded from the study. Bivariate and multivariate analyses were used in this study.

Result: Six hundred seventy-six patients (50.9% male, mean age 43.31 ± 12.49 years) were assessed. The median distance walked in 676 patients was 321.5 (60-504) meters. Bivariate analysis selected the following variables considered in the multivariate analysis: age ($P < 0.001$), gender ($P < 0.001$), dyslipidemia ($P = 0.073$), and BMI ($P < 0.194$). The following variables, diabetes mellitus ($P = 0.67$), hypertension ($P = 0.338$), were excluded from the multivariate analysis model. Multivariate analysis selected the following variables: age ($P < 0.001$) and gender ($P < 0.001$) with $r = 0.31$ and $r^2 = 0.09$ with $P < 0.001$.

Conclusion: In this study, the determinants of six minutes walk test distance in patients undergoing valve surgery are gender and age.

Keywords: Six-minute walk test; Valve surgery; Gender; Age