Comparison of Predicted Complexity of Coronary Lesions with Duke Treadmill Score on Various Risk Factors for Coronary Heart Disease

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Abstract

Background: According to Framingham Study, independent risk factors for coronary heart disease are diabetes, hypertension, smoking, dyslipidemia and obesity. The cut-off value of Duke Treadmill Score (DTS) -3.7 represents a significant coronary lesion (with 74% sensitivity and 73% specificity) and -11.2 for Syntax score >22 (81% sensitivity and 80% specificity).

Objective: To compare the incidence of complex coronary lesions assessed by DTS among various risk factors for coronary heart disease.

Methods and Results: We included 474 patients from treadmill record of Dr Saiful Anwar Hospital in a periode 1st December 2016 until 30th May 2017 who underwent screening for coronary heart disease; 56.3% were men (n = 267) and 43.7% were women (n = 207), with mean age of 54.9 and 54.6 years, respectively. Identified risk factors in this population was 42.3% hypertension; 33.6% smoking; 16.05% menopause; 12.04% diabetes; 11.3% obesity; 9.03% dyslipidemia; 4.35% family history and 6.35% had no risk factor. The significant odds ratio in the incidence of positive ischemic response was diabetes 2.96 (p=<0.0001); hypertension 1.59 (p = 0,0109) and family history of coronary artery disease 3,19 (p=0,0004). Among the positive ischemic response patients, diabetes, menopause and family history of CHD had significant risk in developing significant lesion (odds ratio were 3.76 (p=0.003), 1.28 (p=0.0479) and 4.72 (p=0.0214)). There was no significant differences of all risk factors between DTS values (<-3.7) and complex lesion (DTS <-11.2).

Conclusion: Significant coronary lesions developed more frequent in diabetes, menopause and family history of coronary heart disease, predicted by Duke Treadmill score. There is no significant differences between all risk factor in the incidence of complex coronary lesion.

Keywords: Risk factors; Coronary heart disease; Duke Treadmill Score; Diabetes; Family history