



LONG-TERM PROGNOSIS IN CORONARY ARTERY DISEASE PATIENTS WITH HIGH PHYSICAL CAPACITY

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The purpose of this report is to provide a quantitative evaluation of long-term prognosis (LTP) in coronary artery disease (CAD) patients who have demonstrated high physical capacity on exercise testing (ET). A total of 105 male patients of mean age 52.5 ± 7.5 years have been selected and followed. Of them, 69 (65,7%) with angina pectoris (AP) at effort, 12 (11,4%) with unstable angina and 24 (22,9%) with a history of myocardial infarction (MI). Diagnosis was accepted on accounts of clinical assessment, ECG at rest and exercise ECG. Eighteen patients (17,1%) had only one risk factor (RF), 48 (45,7%) had two and 39 (37,2%) had three or more RFs. The patients were receiving beta-adrenergic blockers, nitrates, calcium antagonists separately or in various combinations. All patients had high physical capacity (step power ≥ 100 W) on ET meeting the WHO standards. The prognostic value of ET routine parameters and the changes of systolic and/or diastolic blood pressure (BP) were analysed (5). LTP was studied for an average period of 20 months (8-33). Favourable LTP was accepted in case of absence of clinical deterioration, maintaining of physical capacity and in 1st and 2nd functional class (according to CCA). Unfavourable LTP was considered with the deterioration of functional class (3rd or 4th), with the occurrence of MI, periods of unstable AP and death. A recognizable Bayes' procedure was accepted, also applied in our previous studies (1,2). A linear determination rule was searched for the purpose of quantitative prognosis estimation. An original criterion was found out showing important informative parameters - age, number of RFs, ET duration, ST depression, double product, hypertensive systolic response, hypertensive diastolic response. At the end of observation a favourable LTP was available in 84.8% of patients and unfavourable - in 15.2%, that is in correlation to other reports (3,4). Parameters can be rated according to informative criteria (1,2) as follows : 1) duration of ET; 2) number of RFs; 3) hypertensive systolic response; 4) hypertensive diastolic response; 5) double product; 6) ST-depression; 7) age (table 1). LTP is also influenced by a history of MI.

Table 1. Resulting linear functions for quantitative evaluation of prognosis

	a ₀	a ₁	a ₂	a ₃	a ₄	a ₅	a ₆	a ₇
F ₁	-21,78	0,117	-0,213	0,712	0,0879	-8,54E-3	4,98E-3	6,32E-2
F ₂	19,11	-0,117	0,213	-0,712	-0,0879	8,54E-3	-4,98E-3	-6,32E-2

Functions are calculated:

$$F_1 = a_0 + a_1x_1 + a_2x_2 + \dots + a_7x_7$$

$$F_2 = a_0 + a_1x_1 + a_2x_2 + \dots + a_7x_7$$

when $F_1 - F_2 > 0$ - a favourable outcome expected

$F_1 - F_2 < 0$ - an unfavourable outcome expected.

LTP remains favourable in 84.8% of patients in a mean period of 20 months following the onset of an ET observation. Patients with a history of MI have a more severe prognosis. The most informative prognostic value is to be found in the duration of ET, RF number and the BP response to load-work. The determination rule obtained allows us to come to a quantitative and easy-to-make LTP estimation.

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Abbreviations used:

CAD - coronary artery disease

LTP - long-term prognosis

MI - myocardial infarction

ET - exercise test

RF - risk factor

BP - blood pressure