

Die Ergometrie in der Diagnostik der koronaren Herzkrankheit im Jahr 2012 – ein Überblick

Le point sur l'ergométrie en 2012 dans le diagnostic de la maladie coronarienne

Literatur / Références

- 1 Fox K, et al. Task Force on the Management of Stable Angina Pectoris of the European Society of Cardiology; ESC Committee for Practice Guidelines (CPG). Guidelines on the management of stable angina pectoris: executive summary: The Task Force on the Management of Stable Angina Pectoris of the European Society of Cardiology. *Eur Heart J*. 2006;27(11):1341–81.
- 2 Myers J, A. R. Recommendations for clinical exercise laboratories: a scientific statement from the American heart association. *Circulation* 2009, 119(24):3144–61.
- 3 Gibbons RJ, and al. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines) ACC/AHA 2002 guideline update for exercise testing: summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). *J Am Coll Cardiol*. 2002; 16; 40(8):1531–40.
- 4 Diamond GA, F. J. Analysis of probability as an aid in the clinical diagnosis of coronary artery disease. *N Engl J Med* , 1979, 300, pp. 1350–1358.
- 5 Morise AP. Comparison of the Diamond-Forrester method and a new score to estimate the pretest probability of coronary disease before exercise testing. *Am Heart J*. 1999, Oct, 138, pp. 740–745
- 6 Weiner DA, McCabe C, Hueter DC, Ryan TJ, Hood WB. The predictive value of anginal chest pain as an indicator of coronary disease during exercise testing. *Jr. Am Heart J*. 1978 Oct;96(4):458–62.
- 7 Cole JP, Ellestad MH. Significance of chest pain during treadmill exercise: correlation with coronary events, *Am J Cardiol*. 1978 Feb;41(2):227–32.
- 8 Weiner DA, Ryan TJ, McCabe CH, Ng G, Chaitman BR, Sheffield LT, Tristani FE, Fisher LD. Risk of developing an acute myocardial infarction or sudden coronary death in patients with exercise-induced silent myocardial ischemia. A report from the Coronary Artery Surgery Study (CASS) registry. *Am J Cardiol*. 1988 Dec 1;62(17):1155–8.
- 9 Conti CR, Bavry AA, Petersen JW. Silent ischemia: clinical relevance. *J Am Coll Cardiol*. 2012 Jan 31;59(5):435–41.
- 10 Froelicher VF, Myers JN. Interpretation of the electrocardiogram. *JN Ed, Manual of Exercise testing*. Mosby, Philadelphia 2007, pp 115–117
- 11 Diagnostic and prognostic value of ST segment depression limited to the recovery phase of exercise stress test. *Lanza GA, Mustilli M, Sestito A, Infusino F, Sgueglia GA, Crea F. Heart*. 2004 Dec;90(12):1417–21.
- 12 Nosrati FJ, Froelicher VF, ST elevation during exercise testing, *Chest*. 1989 Sep;96(3):653–4.
- 13 Sriwattanakomen S, T. A. . S-T segment elevation during exercise: electrocardiographic and arteriographic correlation in 38 patients. *Am J Cardiol*. 1980, Apr, 45(4), pp. 762–8.
- 14 Uthamalingam S, Z. H. Exercise-induced ST-segment elevation in ECG lead aVR is a useful indicator of significant left main or ostial LAD coronary artery stenosis. *JACC Cardiovasc Imaging*. 2011, Feb, 4 (2), pp. 176–86.
- 15 Michaelides AP, P. Z. Significance of exercise-induced ST changes in leads aVR, V5, and V1. Discrimination of patients with single- or multivessel coronary artery disease. *Clin Cardiol*. 2003, May, 26(5), pp. 226–30.
- 16 Grady TA, C. A. Prognostic significance of exercise-induced left bundle-branch block. *JAMA* 1998, 279(2), pp. 153–6.
- 17 Bunch TJ, C. K. The prognostic significance of exercise-induced atrial arrhythmias. *J Am Coll Cardiol*. 2004, pp. 43(7):1236–40.
- 18 Maurer MS, S. E. Prevalence and prognostic significance of exercise-induced supraventricular tachycardia in apparently healthy volunteers. *Am J Cardiol*. 1995, Apr 15, 75(12), pp. 788–92.
- 19 Morris CK, Myers J, Froelicher VF, Kawaguchi T, Ueshima K, Hideg A., Nomogram based on metabolic equivalents and age for assessing aerobic exercise capacity in men, *J Am Coll Cardiol*. 1993 Jul;22(1):175–82.
- 20 Gulati M, Black HR, Shaw LJ, Arnsdorf MF, Merz CN, Lauer MS, Marwick TH, Pandey DK, Wicklund RH, Thisted RA, The prognostic value of a nomogram for exercise capacity in women, *N Engl J Med*. 2005 Aug 4;353(5):468–75.
- 21 Myers J, Prakash M, Froelicher V, Do D, Partington S, Atwood JE. Exercise capacity and mortality among men referred for exercise testing. *N Engl J Med*. 2002 Mar 14;346(11):793–801.
- 22 Khan MN, P. C. Chronotropic incompetence as a predictor of death among patients with normal electrograms taking beta blockers (metoprolol or atenolol). *Am J Cardiol*. 2005, Nov 1, 96(9), pp. 1328–33.
- 23 Lauer MS, F. G. Impaired chronotropic response to exercise stress testing as a predictor of mortality. *JAMA*. 1999, Feb 10, 281(6), pp. 524–9.
- 24 Kispert CP, N. D. Normal cardiopulmonary responses to acute- and chronic-strengthening and endurance exercises. *Kispert CP, Nielsen DH. Phys Ther*. 1985, Dec, 65, pp. 1828–31.
- 25 Naughton J, Dorn J, Oberman A, Gorman PA, Cleary P. Maximal exercise systolic pressure, exercise training, and mortality in myocardial infarction patients. *Am J Cardiol*. 2000 Feb 15;85(4):416–20.

- 26 Gupta MP, Polena S, Coplan N, Panagopoulos G, Dhingra C, Myers J, Froelicher V. Prognostic significance of systolic blood pressure increases in men during exercise stress testing. *Am J Cardiol*. 2007 Dec 1;100(11):1609–13.
- 27 Le VV, M. T. The blood pressure response to dynamic exercise testing: a systematic review. *Prog Cardiovasc Dis*. 2008, Sep-Oct, 51(2),135–60.
- 28 Sanmarco ME, Pontius S, Selvester RH. Abnormal blood pressure response and marked ischemic ST-segment depression as predictors of severe coronary artery disease. *Circulation*. 1980 Mar;61(3):572–8.
- 29 Dubach P, Froelicher VF, Klein J, Oakes D, Grover-McKay M, Friis R. Exercise-induced hypotension in a male population. Criteria, causes, and prognosis. *Circulation*. 1988 Dec;78(6):1380–7.
- 30 Morris CK, Morrow K, Froelicher VF, Hideg A, Hunter D, Kawaguchi T, Ribisl PM, Ueshima K, Wallis. Prediction of cardiovascular death by means of clinical and exercise test variables in patients selected for cardiac catheterization. *J. Am Heart J*. 1993 Jun;125(6):1717–26.
- 31 Le VV, Mitiku T, Sungar G, Myers J, Froelicher V. The blood pressure response to dynamic exercise testing: a systematic review. *Prog Cardiovasc Dis*. 2008 Sep-Oct;51(2):135–60.
- 32 Gobel FL, Norstrom LA, Nelson RR, Jorgensen CR, Wang Y. The rate-pressure product as an index of myocardial oxygen consumption during exercise in patients with angina pectoris. *Circulation*. 1978 Mar;57(3):549–56.
- 33 Sadrzadeh Rafie AH, Sungar GW, Dewey FE, Hadley D, Myers J, Froelicher VF. Prognostic value of double product reserve. *Eur J Cardiovasc Prev Rehabil*. 2008 Oct;15(5):541–7.
- 34 Berman JL, Wynne J, Cohn PF. A multivariate approach for interpreting treadmill exercise tests in coronary artery disease. *Circulation*. 1978 Sep;58(3 Pt 1):505–12.
- 35 Fornitano LD, Godoy MF. Increased rate-pressure product as predictor for the absence of significant obstructive coronary artery disease in patients with positive exercise test. [Article in Portuguese] *Arq Bras Cardiol*. 2006 Feb;86(2):138–44.
- 36 Shetler K, M. R. Heart rate recovery: validation and methodologic issues. *J Am Coll Cardiol*. 2001, Dec. , 38(7), pp. 1980–7.
- 37 McHam SA, Marwick TH, Pashkow FJ, Lauer MS. Delayed systolic blood pressure recovery after graded exercise: an independent correlate of angiographic coronary disease. *J Am Coll Cardiol*. 1999 Sep;34(3):754–9.
- 38 Gianrossi R, Detrano R, Mulvihill D, Lehmann K, Dubach P, Colombo A, McArthur D, Froelicher V. Exercise-induced ST depression in the diagnosis of coronary artery disease. A meta-analysis. *Circulation*. 1989 Jul;80(1):87–98.
- 39 Raxwal V, Shetler K, Morise A, Do D, Myers J, Atwood JE, Froelicher VF. Simple treadmill score to diagnose coronary disease. *Chest*. 2001 Jun;119(6):1933–40.
- 40 Morise AP, Lauer MS, Froelicher VF. Development and validation of a simple exercise test score for use in women with symptoms of suspected coronary artery disease. *Am Heart J*. 2002 Nov;144(5):818–25.
- 41 Mark DB, Shaw L, Harrell FE Jr, Hlatky MA, Lee KL, Bengtson JR, McCants CB, Califf RM, Pryor DB. Prognostic value of a treadmill exercise score in outpatients with suspected coronary artery disease. *N Engl J Med*. 1991 Sep 19;325(12):849–53.
- 42 Lauer MS, Pothier CE, Magid DJ, Smith SS, Kattan MW. An externally validated model for predicting long-term survival after exercise treadmill testing in patients with suspected coronary artery disease and a normal electrocardiogram. *Ann Intern Med*. 2007 Dec 18;147(12):821–8.
- 43 Morise AP. Are the American College of Cardiology/American Heart Association Guidelines for Exercise Testing for Suspected Coronary Artery Disease Correct? *Chest* 2000; 118: 535–541.