Universität Basel

Publication

B-type natriuretic peptides for the evaluation of exercise intolerance

Cardiopulmonary exercise testing is the method of choice for the differentiation of exercise intolerance. This study sought to assess the utility of B-type natriuretic peptide (BNP) and N-terminal-pro-B-type natriuretic peptide (NT-proBNP) for the identification of a cardiocirculatory exercise limitation.; In 162 patients undergoing cardiopulmonary exercise testing, rest and peak exercise BNP and NT-proBNP levels were measured. In 94 patients fulfilling criteria for appropriate effort and sufficient diagnostic certainty, the accuracy of BNP and NT-proBNP for the prediction of a cardiocirculatory limitation, as assessed based on clinical and exercise testing data, was determined.; A cardiocirculatory limitation was identified in 27 (29%) patients. Median (interquartile range) resting BNP [162 (45-415) vs 39 (19-94) vs 24 (15-46) pg/mL; P <.001] and NT-proBNP [506 (129-1167) vs 77 (35-237) vs 34 (19-77) pg/mL; P <.001] were higher in patients with cardiocirculatory as compared with those with pulmonary limitation (n=28) and those without cardiocirculatory or pulmonary limitation (n=39). The area under the receiver operator characteristics curve for BNP and NT-proBNP to identify a cardiocirculatory limitation was 0.79 and 0.84, respectively (P=.15 for comparison of the curves). Sensitivity and specificity of the optimal BNP cutoff of 85 pg/mL were 63% and 84%, respectively. Sensitivity and specificity of the optimal NT-proBNP cutoff of 223 pg/mL were 74% and 85%, respectively. Peak exercise biomarkers were not more accurate than resting levels.; Among patients referred for cardiopulmonary exercise testing for evaluation of unexplained exercise intolerance, BNP and NT-proBNP were similarly useful to identify those with a cardiocirculatory limitation.