Abstract: 1676

Prediction of different causes of mortality by exercise echocardiography in women

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Exercise echocardiography (ExE) can predict overall and cardiovascular mortality. We aimed to assess the value of ExE for the prediction of cardiovascular (CV), cancer (CA) and non-cardiovascular non-cancer (NCV-NCA) death in women.

Methods: Retrospective analysis of prospectively collected data on 4,714 women (age 64±11 years) with a first treadmill ExE performed in our center for known/suspected coronary artery disease. Exclusion criteria were significant valve disease, cardiomyopathy, congenital heart disease, and age <18 year-old. Ischemia was defined as the development of new wall motion abnormalities (WMAs) with exercise; abnormal ExE as ischemia or resting WMAs. A good functional capacity was defined as a maximal workload of 10 metabolic equivalents (METs). The end point was death (CV, CA or NCV-NCA).

Results: During a follow-up of 4.6±4.7 years (interquartile range 0.04-8.0 years) there were 345 CV, 164 CA, and 203 NCV-NCA deaths. Multivariate analysis included clinical characteristics, resting echocardiography, exercise testing and peak exercise echocardiography. Different clinical characteristics predicted CV death, along with maximal achieved workload in Metabolic Equivalents (METs: Hazard Ratio [HR]=0.92, 95% Confidence Interval [CI]=0.88-0.96, p<0.001) and ExE variables. CA death was independently predicted by age and achieved METs (HR=0.93, 95% CI=0.87-0.99, p<0.02). Similarly NCV-NCA death was predicted by clinical characteristics (age, diabetes mellitus, diuretics, nitrites) and also by achieved METs (HR=0.83, 95% CI=0.78-0.88, p<0.001). Nor ischemia nor abnormal ExE increased the risk for CA or NCV-NCA death.

Annualized CV deaths were almost quadruple in women with bad functional capacity as compared to those with good functional capacity (2.2% vs. 0.6%, p<0.001). The same occurred for NCV-NCA death (1.4% vs. 0.3%, p<0.001), whereas CA deaths were double in patients with bad functional capacity (0.9% vs. 0.4%, p<0.001).

In conclusion, an ExE study can predict not only CV death, but death due to CA or to NCV-NCA. Fit women based on the achievement of 10 METs during exercise testing, have less chance of death from any cause.