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### Reduced exercise capacity and clinical outcomes following acute myocardial infarction

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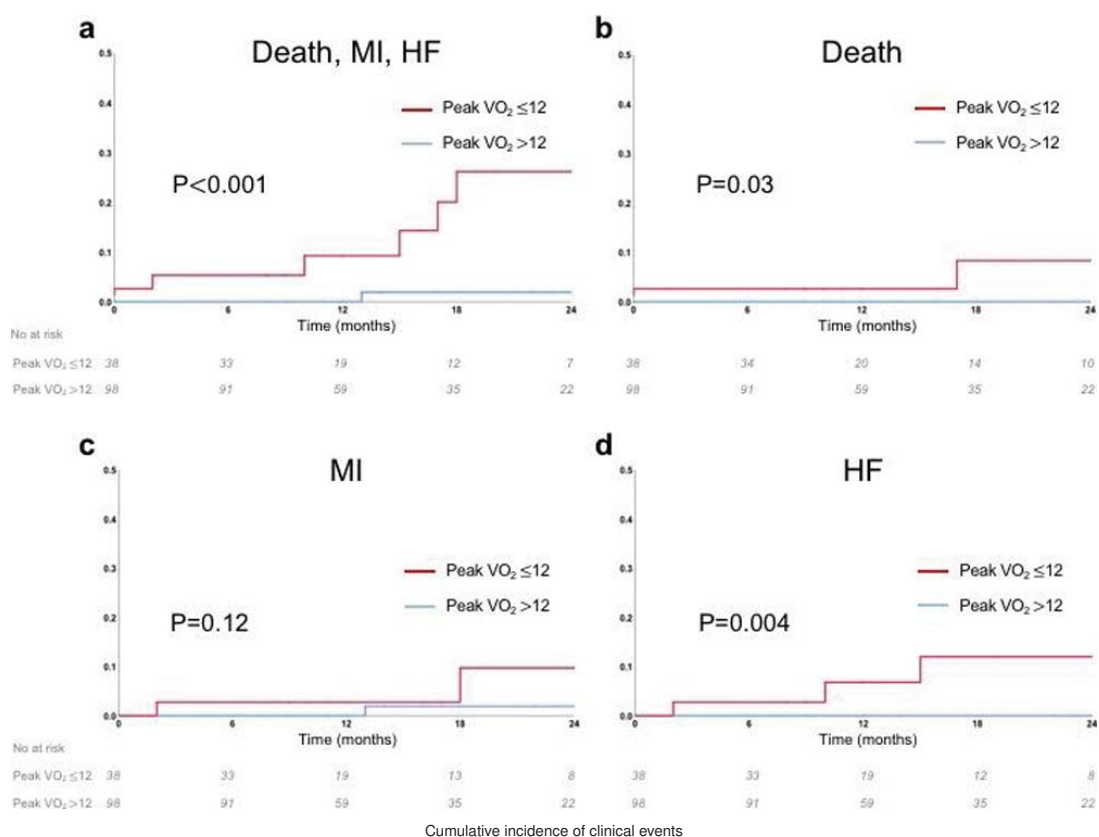
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**Background:** Reduced exercise capacity is known to be an important predictor of poor prognosis and disability in patients with cardiovascular diseases and chronic heart failure, and even members of the general population. However, data about exercise capacity assessed by cardiopulmonary exercise testing (CPX) in acute myocardial infarction (AMI) patients who underwent primary percutaneous coronary intervention (PCI) is scarce. The purpose of this study is to assess the associated factors and clinical influence of exercise capacity measured by CPX in AMI patients.

**Methods:** Among 594 consecutive AMI patients who underwent primary PCI, we examined 136 patients (85.3% men, 64.9±11.9 years) who underwent CPX during hospitalization for AMI. CPX was usually performed five days after the onset of AMI. Reduced exercise capacity was defined as peak oxygen consumption (peak VO<sub>2</sub>) ≤12. Clinical outcomes including all-cause death, myocardial infarction, and hospitalization due to heart failure were followed.

**Results:** Among 136 patients, reduced exercise capacity (peak VO<sub>2</sub> ≤12) was seen in 38 patients (28%). Patients with reduced exercise capacity were older, more likely to have hypertension, and had lower renal function. In echocardiography, patients with reduced exercise capacity had higher E/e' and larger left atria. Median follow-up term was 12 months (interquartile range: 9–22). The occurrence of composite endpoints of all-cause death, myocardial infarction, and hospitalization due to heart failure was significantly higher in patients with peak VO<sub>2</sub> ≤12 than those with peak VO<sub>2</sub> >12 (p<0.001). Multivariate logistic analysis showed that E/e' (Odds ratio, 1.19, 95% confidence interval 1.09 to 1.31, p<0.001) was an independent predictor of reduced exercise capacity (peak VO<sub>2</sub> ≤12).

**Conclusion:** Diastolic dysfunction is associated with reduced exercise capacity following successful primary PCI in AMI patients and may lead to poorer clinical outcomes.



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