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RESEARCH NEWS

Supplemental oxygen does not reduce mortality in patients with suspected myocardial infarction, finds study

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Routine use of supplemental oxygen in patients with suspected myocardial infarction (MI) who are not hypoxic is associated with no reduction in mortality at one year, a randomised trial has found.[1]

Supplemental oxygen has been used routinely in patients with suspected MI for more than a century and is recommended in clinical guidelines. The rationale behind oxygen therapy is to increase oxygen supply to the ischaemic myocardium but this is based only on laboratory data and small clinical studies.

"Above normal oxygen levels in the blood can cause coronary vasoconstriction and increase the production of reactive oxygen species, potentially contributing to reperfusion injury," explained the authors of the new study, led by Robin Hofmann, from the Karolinska Institute in Sweden.

The nationwide study randomised 6629 patients presenting to Swedish ambulance or hospital services with suspected MI and oxygen saturations of 90% or higher to oxygen or ambient air. Nearly all patients had chest pain but only a small number (2.1%) had shortness of breath.

Results, reported in the *New England Journal of Medicine*, showed no difference in all cause mortality at one year between patients randomised to oxygen (5.0%) and those given ambient air (5.1%, hazard ratio 0.97, 95% confidence interval 0.79 to 1.21, P=0.80).

Rates of rehospitalisation with MI within one year of the first episode were also similar (3.8% in patients given oxygen vs 3.3% in controls, HR 1.13, 95% CI 0.88 to 1.46, P=0.33).

"We did not find a beneficial effect of oxygen treatment with respect to all cause mortality at one year," the study authors said. They noted that their findings were consistent across predefined subgroups, including those with greater myocardial injury indicated by higher cardiac troponin levels.

1 Hofmann R, James SK, Jernberg T, et al. Oxygen therapy in suspected acute myocardial infarction. NEJM 2017. www.nejm.org/doi/full/10.1056/NEJMoa1706222#t=article.