
THE USE OF SUPPLEMENTAL OXYGEN IN MI PATIENTS IS OF NO BENEFIT: A META-ANALYSIS

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The Use of Supplemental Oxygen in MI Patients is of no Benefit: A Meta-analysis

The use of supplemental oxygen in normoxemic patients suspected to have acute myocardial infarction is of no clinical benefit, says a new article in the British Medical Journal.

There has been a growing interest in this topic in the literature with a lot of evidence against the routine use of supplemental oxygen in patients with a presentation suggesting the presence of acute myocardial infarction. The AVOID and the DETO2X-AMI trials played an important role in changing this concept. The European Society of Cardiology guidelines recommended against the routine use of oxygen in normoxemic patients.

Dr. Nariman Sepehrvand, the principal investigator and the Research Fellow at Mazankowski Alberta Heart Institute, commented “I think now it’s safe to say that oxygen therapy has no additional benefit in patients with normal baseline oxygen levels. On the other hand, there is no controversy around the benefit of supplemental oxygen in patients with an acute coronary syndrome who have lower than normal blood oxygen levels (< 90%).”

The meta-analysis pooled data from eight randomized clinical trials with the total of 8000 patients randomized to either administering supplemental oxygen or room air. The endpoints were in-hospital mortality, 30-day mortality, and infarct size. Among all the endpoints, oxygen administration did not have a significant positive impact when compared to the room air.

Dr. Sepehrvand comments “Although DETO2X trial accounts for a significant portion of the pooled cohort in this study, the meta-analysis provides insight about the totality of the evidence. We had the chance to work with the lead authors of the recent three major RCTs in the field, including Robin Hofmann and Stefan James from DETO2X-AMI, Dion Stub from AVOID and Ardavan Khoshnood from SOCCER trial. More importantly, this meta-analysis includes unpublished data from SOCCER and DETO2X trials.”

“Based on the existing evidence, oxygen therapy seems to have no additional benefit in patients with normal baseline oxygen levels. We additionally noted that there was no additional benefit of supplemental oxygen therapy on infarct size with the caveat that the quality of evidence for that analysis is at best moderate,” Dr. Sepehrvand concluded.

The authors reported some limitations of the meta-analysis. Firstly, the mortality rate was low which lead to the study being underpowered for this outcome. Secondly, the clinical heterogeneity among the data from the pooled studies. Lastly, the normal cutoff of normal SpO₂ differs among the studies, so the effect of supplemental oxygen on patients with SpO₂ between 90% and 94% could not be determined.

When asked about the possible applications of the study on the clinical practice, Dr. Sepehrvand replied, “DETO2X-AMI trial has already had its impacts and the latest version of the European Society of Cardiology’s STEMI guideline which was published simultaneously with the results of DETO2X-AMI trial, alluded to routine oxygen therapy as “not-recommended in normoxemic patients.” The other guidelines should also take clear positions to guide clinical practice in departing from the previous routine use of supplemental oxygen in patients with normal oxygen levels. Moreover, I think these findings will also have an

impact on clinical research with revisiting the role of supplemental oxygen in many other disease conditions, such as stroke and heart failure.

Source: [Effects of supplemental oxygen therapy in patients with suspected acute myocardial infarction: a meta-analysis of randomised clinical trials](#)