Cochrane Corner: What is the clinical impact of oxygen therapy for acute myocardial infarction? Evaluation of a Cochrane systematic review

Cochrane Corner: Qual é o impacto clínico da administração de oxigénio em doentes com enfarte agudo do miocárdio? Avaliação de uma revisão sistemática Cochrane

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Clinical question
What is the clinical impact of oxygen therapy for acute myocardial infarction?

Description of review
This is a systematic review of randomized controlled trials (RCTs) on routine use of inhaled oxygen in patients with acute myocardial infarction (AMI) (ST-segment elevation myocardial infarction [STEMI] or non-STEMI) within the first 24 hours after the onset of symptoms. The primary outcome was overall mortality; the secondary outcome was opiate use as a surrogate outcome for pain.

Results
The Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, CINAHL and Web of Science were searched and the eligibility of the results was assessed. Four RCTs were included for the qualitative and quantitative analysis, involving 430 patients and 17 deaths. Studies in which hyperbaric or aqueous oxygen, oxygen associated with hemoglobin, or oxygen combined with nitric oxide were excluded.

In the selected studies, oxygen was administered at 4–6 l/min by facial mask or nasal cannula. Oxygen therapy was compared with no oxygen administration or its use only in cases of hypoxemia.

The relative risks of death and opiate use were not significantly different between groups (Figure 1), and a significant increase (16%) in risk of death was observed in the oxygen therapy arm in the two most recent RCTs. The small number of deaths does not exclude that this may be due to chance.
CI: confidence interval.

leading to increased vascular highlights the scarcity of clinical tri-
of six clinical trials with 665 patients with acute
review included different pathophysiological entities with
different treatments (STEMI and non-STEMI), and so the real
impact of oxygen therapy in these different contexts is not

It should also be considered that most of the studies in the
review included different pathophysiological entities with
different treatments (STEMI and non-STEMI), and so the real
impact of oxygen therapy in these different contexts is not

In contrast to the results of this review, another Cochrane review of six clinical trials with 665 patients with acute
coronary syndrome estimated that hyperbaric oxygen therapy reduced the relative risk (RR) of death by 42% (RR 0.58, 95% CI 0.36–0.92). This result prompts the question as to whether the negative findings of the review under discussion

are due to its low statistical power and/or methodological
weaknesses. The current guidelines of the European Society of
Cardiology only recommend oxygen therapy in cases of
hypoxemia. The clinical question posed here clearly needs to be
answered definitely by future pragmatic clinical trials with
an appropriate design and size.

Ethical disclosures

Protection of human and animal subjects. The authors
declare that no experiments were performed on humans or
animals for this study.

Confidentiality of data. The authors declare that no patient
data appear in this article.

Right to privacy and informed consent. The authors
declare that no patient data appear in this article.

Conflicts of interest

The authors have no conflicts of interest to declare.

References
