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**Oxygen therapy in myocardial infarction patients with or without diabetes mellitus - A predefined subgroup analysis from the DETO2X-AMI trial**

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**On behalf:** DETO2X-SWEDEHEART

**Topic(s):**
Acute Coronary Syndromes: Pharmacotherapy

**Citation:**

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**BACKGROUND**
In diabetes, there is an interaction between hyperglycaemia and cellular hypoxia, which may induce oxidative stress. Oxygen therapy in patients with diabetes and myocardial infarction (MI) has not been studied.

**PURPOSE**
Our aim was to determine the effects of supplemental oxygen in MI patients with or without diabetes.

**METHODS**
The DETermination of the role of Oxygen in suspected Acute Myocardial Infarction (DETO2X-AMI) trial randomised 6629 patients with suspected myocardial infarction (MI) to receive oxygen at 6 L/min for 6-12 hours or ambient air. In this prespecified analysis involving 5010 patients with confirmed MI, 934 had known diabetes (19%). The main composite endpoint was the effect of supplemental oxygen on all-cause death, rehospitalisation with MI, or heart failure at one year in patients with diabetes. Key secondary endpoint was the comparison between patients with or without diabetes.

**RESULTS**
In patients with diabetes, the main composite endpoint occurred in 16.2% (72 of 445) of patients allocated to oxygen compared to 16.6% (81 of 489) allocated to ambient air (hazard ratio [HR] 0.93; 95% confidence interval [CI], 0.67–1.27, P=0.81) at one year (figure). There was no statistically significant difference for the individual components of the main composite endpoint, or the rate of cardiovascular death up to one year. In comparison, corresponding endpoints in patients without diabetes were similar between the treatment groups.

However, when comparing patients according to diabetes status, event rates were significantly higher in the diabetic population (main composite endpoint: HR 1.60; 95% CI, 1.32-1.93, P<0.01).

**CONCLUSIONS**
Oxygen therapy in normoxemic MI patients did not significantly affect 1-year all-cause death, cardiovascular death, rehospitalisation with MI or heart failure, irrespective of underlying diabetes. Noteworthy, despite that the incidence of cardiovascular outcomes has declined substantially in patients with diabetes over the last decades, we still observed markedly increased event rates in patients with diabetes.
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