

Diurnal variation on the onset of Myocardial Infarct

Quick Facts:

1. Obstructive sleep apnea may be a trigger for MI
2. Patients with nocturnal onset of MI should be evaluated for obstructive sleep apnea.

Fatima H. Sert Kuniyoshi, PhD et al. Day–Night Variation of Acute Myocardial Infarction in Obstructive Sleep Apnea. J Am Coll Cardiol, 2008; 52:343-346

Objectives: This study sought to evaluate the day–night variation of acute myocardial infarction (MI) in patients with obstructive sleep apnea (OSA).

Background: Obstructive sleep apnea has a high prevalence and is characterized by acute nocturnal hemodynamic and neurohormonal abnormalities that may increase the risk of MI during the night.

Methods: We prospectively studied 92 patients with MI for which the time of onset of chest pain was clearly identified. The presence of OSA was determined by overnight polysomnography.

Results: For patients with and without OSA, we compared the frequency of MI during different intervals of the day based on the onset time of chest pain. The groups had similar prevalence of comorbidities. Myocardial infarction occurred between 12 AM and 6 AM in 32% of OSA patients and 7% of non-OSA patients ($p = 0.01$). The odds of having OSA in those patients whose MI occurred between 12 AM and 6 AM was 6-fold higher than in the remaining 18 h of the day (95% confidence interval: 1.3 to 27.3, $p = 0.01$). Of all patients having an MI between 12 AM and 6 AM, 91% had OSA.

Conclusions: The diurnal variation in the onset of MI in OSA patients is strikingly different from the diurnal variation in non-OSA patients. Patients with nocturnal onset of MI have a high likelihood of having OSA. These findings suggest that OSA may be a trigger for MI. Patients having nocturnal onset of MI should be evaluated for OSA, and future research should address the effects of OSA therapy for prevention of nocturnal cardiac events.

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