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**Discussion Forum Response from Authors to Letter regarding Article,
“Three questions regarding the 2017 ESC STEMI guidelines” EURHEARTJ-D-18-02669**

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We appreciate the comments from Baschnegger et al. regarding oxygen therapy recommendation in the 2017 ESC STEMI guidelines,¹ which allow us to provide additional clarifications.

Baschnegger and colleagues accurately comment that the recommendations in the STEMI guidelines refer to SaO₂ but are based on trials using SpO₂ as thresholds.^{2,3} Therefore, as indicated by Drs Baschnegger using SpO₂ would have been a more correct unit. However, one of the main references in the present guidelines⁴ as well as previous STEMI guidelines used SaO₂. It was not possible due to the space restrictions to explain the discordance. In emergent situations (like STEMI) oxygenation status can be obtained both from blood gases (SaO₂) and from pulse oximetry (SpO₂). In patients with SaO₂ values $\geq 90\%$, the mean difference between SpO₂ and SaO₂ is less very small ($< 2\%$).⁵ Thus, SaO₂ and SpO₂ values are assumed to be very similar for oxygen concentrations above 90%. Thus the 90% threshold for recommending oxygen therapy apply both for SaO₂ and SpO₂.

The second comment relates to the recommendation of oxygen therapy for patients with respiratory distress. We intentionally omitted the recommendation of oxygen in patients with respiratory distress for several reasons. The term that is not well defined and the only evidence available relates to oxygen therapy based on oxygen saturation. Therefore, we recommend to always measure SpO₂ (or SaO₂) for the decision to provide oxygen.

In patients with STEMI and acute heart failure with pulmonary oedema the recommendation of oxygen therapy to maintain a saturation $> 95\%$ holds a level of evidence C. The saturation level is arbitrary and the reason for the recommendation is the higher risk of prolonged hypoxia and relapse of hypoxemia in patients with acute heart failure.

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