

LETTER

Effect of recruitment maneuver on hypoxemia during apnea test: after or before?

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See related research by Paries *et al.*, <http://ccforum.com/content/16/4/R116>

We read with interest the article entitled 'Benefit of a single recruitment maneuver after an apnea test for the diagnosis of brain death' by Paries and colleagues [1].

The 'ideal' apnea test (AT) should permit an increase in PaCO₂ (partial pressure of carbon dioxide in arterial blood) but prevent a detrimental decrease in PaO₂ (partial pressure of oxygen in arterial blood). We agree that a recruitment maneuver (RM) after the AT can improve oxygenation and result in protection of donor organs. However, we have two comments.

First, changes in PaCO₂ are not reported in the article. It has been shown that RM can affect CO₂ elimination in different ways [2]. We think that the course of - already elevated - PaCO₂ after RM would be of interest, and may also have clinical consequences. The structure of the study is appropriate to report the changes in PaCO₂.

Second, we have shown in an animal model that a RM prior to AT followed by apneic oxygenation was associated with an increase in PaO₂ without affecting the increase in PaCO₂ [3]. RM plus apneic oxygenation also improved the survival time during AT, and there was no change in PaCO₂ (which is a warranted result).

We think that the 'optimal' method for the AT should also consider changes in PaCO₂. A RM before (likewise

after) the AT could prevent hypoxemia. Whether a 'combination' of RM's before and after the AT would have additive effects should also be examined in further clinical studies.

Abbreviations

AT, apnea test; PaCO₂, partial pressure of carbon dioxide in arterial blood; PaO₂, partial pressure of oxygen in arterial blood; RM, recruitment maneuver.

Competing interests

The authors declare that they have no competing interests.

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References

1. Paries M, Boccheciampe N, Raux M, Riou B, Langeron O, Nicolas-Robin A: **Benefit of a single recruitment maneuver after an apnea test for the diagnosis of brain death.** *Crit Care* 2012, **16**:R116.
2. Tusman G, Bohm SH, Suarez-Sipmann F, Scandurra A, Hedenstierna G: **Lung recruitment and positive end-expiratory pressure have different effects on CO2 elimination in healthy and sick lungs.** *Anesth Analg* 2010, **111**:968-977.
3. Senturk E, Tanju S, Ziyade S, Ozcan PE, Tugrul S, Cakar N: **A recruitment maneuver improves apneic oxygenation.** *Minerva Anestesiol* 2011, **77**:598-603.

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