

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 PaCO<sub>2</sub> (partial pressure of carbon dioxide in arterial blood) but prevent a detrimental decrease in PaO<sub>2</sub> (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 PaCO<sub>2</sub> are not reported in the article. It has been shown that RM can affect CO<sub>2</sub> elimination in different ways [2]. We think that the course of - already elevated - PaCO<sub>2</sub> after RM would be of interest, and may also have clinical consequences. The structure of the study is appropriate to report the changes in PaCO<sub>2</sub>.

Second, we have shown in an animal model that a RM prior to AT followed by apneic oxygenation was associated with an increase in PaO<sub>2</sub> without affecting the increase in PaCO<sub>2</sub> [3]. RM plus apneic oxygenation also improved the survival time during AT, and there was no change in PaCO<sub>2</sub> (which is a warranted result).

We think that the 'optimal' method for the AT should also consider changes in PaCO<sub>2</sub>. 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; PaCO<sub>2</sub>, partial pressure of carbon dioxide in arterial blood; PaO<sub>2</sub>, 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

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