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Statement of Interest: A statement of interest for T. Lahm can be found at www.erj.ersjournals.com/misc/statements.dtl

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From the authors:

We appreciate the comments of T. Lahm about our recently published article [1]. He suggests that one possible explanation for the better survival observed in females with chronic obstructive pulmonary disease (COPD) compared to that of males with COPD may be the presence of less severe hypoxemic vasoconstriction and, therefore, pulmonary hypertension (PH) and/or right ventricular hypertrophy in females compared with males. Although he provides indirect evidence to support his comments, we have a few problems with this mechanism being an important one. This is based on the fact that in our study population only 18% of participants had Global Obstructive Chronic Lung Disease stage IV and 12% were in quartile 4 of the BODE (body mass index, airflow obstruction, dyspnoea, exercise capacity) index, usually the type of individuals that develop hypoxaemia and PH. In fact, only 25 patients (~5%) from our population were on long-term oxygen therapy, which would be the population where the likelihood of cor pulmonale is highest. However, the difference in mortality between females and males persisted across disease severity. Conversely, we do agree with his comments regarding the more severe patients, especially those with hypoxaemia, as was previously shown by the works of the MIYAMOTO *et al.* [2], CROCKETT *et al.* [3] and FRANKLIN *et al* [4].

A problem with T. Lahm's theory is that females with obstructive sleep apnoea syndrome have a higher mortality than males with obstructive sleep apnoea syndrome [5, 6]. If we accept that sleep apnoea represents an example of intermittent hypoxaemia and increased pulmonary artery pressure, and is usually associated with right ventricular hypertrophy and adipose tissue, T. Lahm's proposed theory to explain the better survival effect in females with COPD is not quite that clear.

Greater effort in the research field is needed in order to clarify the increasingly important issue of sex and disease expression. However, the interesting hypothesis proposed by T. Lahm sheds more light on to this dark field; we are thankful for his insight.

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