Reviewer’s report

Title: Pulse oximetry in the newborn: is the left hand pre- or postductal?

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Reviewer: Ingo Daehnert

Reviewer’s report:

The paper is well written and innovative. It studies for the first time if ductus arteriosus influences left-hand arterial perfusion in term and preterm neonates. The method is reliable, the results are convincing.

No major compulsory revisions

No discretionary revisions

However, there is one minor but essential revision:

The authors should revise the discussion and conclusion according to the following remarks.

The authors state on page 7: "In the subgroup consisting of babies with respiratory disorders, only a trend, but no statistically significant difference between both hands was observed (p-value 0.06). This trend towards lower values on the left hand can physiologically be explained by a delayed decrease in pulmonary hypertension." In plain words, left hand arterial perfusion is influenced by ductus arteriosus if there is pulmonary hypertension! However, the authors do not elaborate on the incidence of patients with significant pulmonary pathology or persistent pulmonary hypertension (PPHN) in the study group. Despite they could easily have added the example of a patient with severe PPHN and postductal saturations on the left hand they chose not to do so.

In contrast the authors included the findings of some individual patients with complex congenital heart disease (page 4) and conclude on page 7: "We therefore conclude that, with the exception of children with CHD, POS on both hands can equally be considered as preductal." This deduction is inconclusive.

True is: Most patients with congenital heart disease are not different from the study group, their left hand is preductal. Only a small minority of complex lesions, aortic arch anomalies, coarctation and/or obligatory right to left ductal shunting show differences between both arms (and in some of them the left arm is preductal and the right arm is the postductal one).

A true conclusion would be "with the exception of some children with complex or duct dependent CHD and some children with PPHN, POS on both hands can equally be considered as preductal".

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.