Reviewer’s report

Title: Elective high-frequency oscillatory ventilation in preterm infants with respiratory distress syndrome: an individual patient data meta-analysis.

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Reviewer: Gerd Schmalisch

Reviewer’s report:

Despite the large body of literature the efficacy and safety of high-frequency oscillatory ventilation (HFOV) compared to modern conventional ventilation (CV) is controversially discussed up to now. The authors will give answers to unanswered, clinically important questions by a retrospective evaluation of randomized HFOV trials. In contrast to the several published studies using a meta analysis of aggregated data the novel of this study protocol is to collect and reanalyze the original data on each individual infant in each trial. This may reduce but not eliminate the limitations of a retrospective analysis. Nevertheless the study is interesting because it will provide a more flexible analysis of subgroups and outcomes. However, there are still some questions.

Major points.

1. The main question of this study is the outcome of HFOV compared to CV and the risk for adverse effect. This will mainly depend on the controls used in the studies. The inclusion criteria of the randomized trials regarding the CV used should be better defined.

2. The ventilation strategies including the non-invasive ventilation has been distinctly improved during the last 20 years. Was this considered in the inclusion criteria of the studies? Is it useful for the planed comparisons to include studies in which no lung protective ventilation strategy was used (see page 12)?

3. A difficult problem may be the aggregation of the individual data. In this point is the protocol sparse. Does a standardized case report form (CRF) exist for each patient?

4. The interpretation of outcome measures and adverse effects may be difficult if different methods of ventilatory support are used in the same patient (e.g. CV, HFOV, CPAP,...). Are these patients excluded from the study or how they will be considered?

5. The individual data will be de-identified. Who performs the anonymization and in which way? Is a later identification of any patient for reevaluation possible? (page 8)

Minor points

· Page 1: Mr. Thome-U is meanwhile in Leipzig, Germany.
Individual Patient Data (IPD) meta-analysis is a well known technique for a meta-analysis. (Unfortunately, application seldom possible). At least from the Perinatology IPD studies are know. (e.g. Jorgensen AL et al. BJOG. 2008)

**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'