Reviewer's report

Title: The Vermont Oxford Neonatal Encephalopathy Registry: rationale, methods, and initial results

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Reviewer: Amit Mathur

Reviewer's report:

This article is a well written report of an important data set from a database in which the authors have detailed the concept, process, data collection and report of the Neonatal Encephalopathy Registry of the Vermont Oxford Network from 2006-2010. The authors have a clearly defined aim to describe the clinical characteristics as well as the treatment of infants suffering from encephalopathy. This aim is directly answered by the data and analysis.

This large dataset is unique in that it provides an overview of clinical practices in management of neonatal encephalopathy across a heterogenous group of neonates. The data, as described, comes from a carefully regulated source and provides broad applicability to many clinicians and researchers and provides a framework around which quality improvement initiatives can be organized.

There are however two inherent issues with such a data set. One is the limited current (in 2012) relevance of the report for current clinical practice in a field that has rapidly evolved during this time period. Therapeutic hypothermia for neonatal encephalopathy has become standard of care as has applicability of EEG monitoring and MR imaging. Thus many of the findings in this manuscript will naturally appear “dated” as several units may have already implemented QI initiatives. The second issue that the author’s acknowledge is the inherent heterogeneity in the size and level of care provided in the NICUs within the group. It may be more relevant to practitioners to see data stratified by levels of care in their own NICU. These issues notwithstanding, this registry provides an important historical overview of neonatal care in encephalopathy from 2006-10. Perhaps the strongest aspect of the paper is the conclusion highlighting the areas for improvement in clinical care and future research topics. These findings are relevant to daily practice and provide for an excellent starting point for future research.

Discretionary revisions-

The inclusion of infants who received paralytics as well as those with a five minute Apgar score <=3 seems to be a good approach to "cast a wide net." However, though it was stated that many infants had more than one eligibility criteria, only the overlap between NER and HT was discussed. A discussion on the potential over-identification may be helpful.

With the insights and feedback that the steering group may have received over
the years, they should mention proposed updates to the NER (such as the MRI injury scoring) in the future.

**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