Reviewer's report

Title: Risk of Cardio-Respiratory Dysfunction in Preterm Infants Placed in Car Seats: A Cross-Sectional Study

Version: 2 Date: 18 February 2005

Reviewer: alistair gunn

Reviewer’s report:

General
This is a useful, practical clinical study that examines possible factors that might predict whether preterm infants will significant hypoxaemia while seated in a semi-reclining car seat.

The authors report that, perhaps surprisingly but reassuringly, the presence of mild cardio-respiratory symptoms before being placed in the car seat was not predictive.

Conversely, they found that periodic breathing after placement in the car seat was highly associated with severe desaturation. This is _not_ a surprise, but is not clear from previous studies, and would provide a useful additional focus for clinical assessment. Although gestation and predischarge weight were not predictive, the only 2 infants to develop severe apnea were less than 28 weeks and <2000g. This could not be assessed statistically, but is likely a valid clinical warning.

The only real limitation of the study is the short period of study. Several of the papers cited in this article, and others, make it clear that the infants sleep state is a major determinant of whether desaturation occurs (cf ref 16). From the methods it is not clear what sleep state the infants were in during monitoring, however, the short interval suggests that they were mainly awake. During a longer period of transport, the infants would likely enter deep sleep and thus may be at higher risk of severe desaturations.

There is no mention of the possible role of recumbent car seats for transporting preterm infants or other possible approaches. In view of the present results, which confirm a very high rate of mild cardiorespiratory symptoms in all of their preterm infants, and some serious events in VLBW infants, even in short-term monitoring, should the authors consider recommending this approach at least for VLBW infants?

---------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors need to
1. clarify the stage and duration of sleep during testing.
2. Insert adequate discussion of the important effect of sleep on risk of desaturations in a semi-reclining car seat, and the related potential limitations of the present study
3. On a related note, it is important to insert additional discussion of the potential danger of extrapolating from short-term monitoring to longer car trips, and the potential dangers for example of leaving babies asleep in a car seat. The authors clearly recognise this issue, but it is worth making it very clear.
4. seriously consider whether in the final paragraph they wish to make a more general cautionary statement about whether VLBW infants should be transported supine?
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Methods, first line. What is a convenience sample? Is this meant to be "consecutive". If so, the authors should provide the interval over which the infants were recruited.

Methods, second sentence. It is disappointing that so many infants who would be expected to be at higher risk were excluded. The authors should note this limitation in the discussion.

Data analysis, first sentence. The analytical categories should be presented more clearly. eg. <28 vs. 28 to <37 weeks., <=2000 vs. >2000. This respondent urges the authors to use exactly the same labels as in the table and results.

2nd to Last sentence. Why is a date range given for the statistical software? It is more appropriate to state the version of the software.

last sentence. "percentiles"

Results, para 1, line 5. Does this mean that 'the few infants' had repeated but mild symptoms? If so, this should be clarified.

Para 3. This para needs to be reworded to present the findings more clearly, and to remove all the repetition of data from table 1. This is not helpful, and as written overemphasizes non significant findings.

Figure 1 should be converted to Table 2, which is more appropriate for simple incidence data.

Discussion, para 2 repeats a large section of results on periodic breathing, even down to repeating the incidences and P value. This is repetitious and inappropriate. Results should be in the results only.

Same para. The Yamamoto study demonstrated that peripheral desaturation caused severe cerebral desaturation. This should be stated more clearly.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.