Reviewer's report

Title: Acute Mercury Poisoning: A Case Report

Version: 1 Date: 16 August 2009

Reviewer: Herman Jones Gibb

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Major Compulsory Revisions

There is no Table 1 as indicated on page 5.

On page 4, the document indicates that the “normal” range of blood mercury is 10-20 µg/dL and that the blood mercury of the mother seven days after hospital admission was 30 µg/dL.

In the U.S., blood mercury in the general population is less than 1 µg/L (i.e., >100-200 X lower than that reported as “normal” in the article by Sarikaya et al.). [See Caldwell et al. Total blood mercury concentrations in the U.S. population 1999-2006. Int. J. Hyg Environ. Health (2009]

Gibb et al. (2008) reported that the mean blood and urine concentrations of the most exposed subgroup in a group of mercury recycling workers was 7.85 µg/L and 26.9 µg/g-Cr, respectively. [See Gibb et al. Biomarkers of mercury exposure at a mercury recycling facility in Ukraine. J Occup Environ Hyg 5:483-489.] Thus the most-exposed group of workers in the study would have had an average blood mercury > 10 X lower than that reported as “normal” by Sarikaya et al.

WHO states that, with a urinary mercury concentration of 100 µg/g-Cr, the probability of developing the classical neurological signs of mercurial intoxication is high. [See WHO. Inorganic Mercury. Environmental Health Criteria 118. Geneva WHO/IPCS. 1991] Assuming that blood and urinary concentrations reported by Gibb et al. roughly correlate, the blood concentrations reported by Sarikaya et al. would suggest that the normal population has a high probability of mercurial intoxication.

Clearly, the blood concentration of mercury reported by Sarikaya et al. for the normal population must be wrong. The value reported by the authors for the mother is likely also wrong since the blood sample was drawn seven days after admission to the hospital and after chelation had been done. If her blood mercury seven days after admission to the hospital had been 30 µg/dL, her blood level at time of admission would have been enormous which is inconsistent with the fact that no symptoms were reported after admission.

The article indicates that the mother breast fed the infant after the mercury exposure (page 30 and that 24 hours after the breast feeding, the infant died. The authors attribute the death, however, to the infant's inhalation of mercury
The article indicates that the child died before admission to the hospital without any specific diagnosis (page 3). What was the recorded cause of death?

Minor Essential Revisions

Several parts of the report need rewording:

Page 3: “The clinical effects of mercury poisoning depend on the form and the route of administration.” Mercury may be administered to animals for toxicological testing, but it is definitely not administered to humans.

Page 5: “Death of the previously healthy baby in 24 hours has given rise to the thought of necrotizing bronchitis, pneumonia or respiratory distress syndrome.” What does it mean “has given rise”? The authors need to reword.

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

Quality of written English: Needs some language corrections before being published

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 interest.