Author's response to reviews

Title: Acute Mercury Poisoning: A Case Report

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Author's response to reviews: see over
To the Editor,

We are now submitting the revised version of our manuscript entitled 'Acute Mercury Poisoning: A Case Report' in accord with the reviewers' recommendations.

We made changes in the manuscript with blue colors.

The details are listed below (red color)

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Thank you in advance for your time in considering this manuscript.

Sincerely,

Mustafa SERINKEN, MD
Reviewer: Kathleen Caldwell
Reviewer's report:
- Major Compulsory Revisions
  None noted
- Minor Essential Revisions
  1. Table one is not attached or missing. Either add table or remove test referencing it. Corrected.

Page 4, please provide a reference for your normal range of whole blood mercury listed as 10-20 ug/dL. Please indicate for what population this is considered "normal". Corrected. (normal range: 0 and 10 µg/dL).

Reviewer: Larissa Velez
Reviewer's report:
major revisions
1. The conclusions talk about prevention and safety of the community, but no discussion relates to the other exposed daughter, the husband, and whether there was any cleaning/decontamination of a potentially hazardous home environment. If this mercury was volatilized, potentially the patient and any other family members were sent back to a harmful environment. The other children did not exhibit any manifestations of the disease.
2. Why was NAC used as chelating agent? Not much literature supports this...were BAL/DMSA/DMPS not available? No antidotes other than NAC was available in the institution.
3. was there an autopsy of the child who died? The information given below was added to the case presentation section
   “The autopsy report disclosed a suspected mercury poisoning which might have led to cardiorespiratory collapse resulting in death of the infant.”

Minor:
1. the language at parts is not completely correct, the syntax is odd.
2. authors alternate between the use of inorganic and metallic mercury for this agent - the correct one is metallic mercury; inorganic mercury is the term used for the mercurial salts. corrected
3. How was the fever treated? Did the oxygen satration go back to normal (96% is not that normal for a healthy 36 y/o)? Her fever relieved after administration of 1 gr paracetamol given via intravenous route, while arterial oxygen saturation rose to 98% with supplemental oxygen.
4. serine refers to urine? serine
5. Any follow up mercury levels? Is it possible that she came back with abdominal pain due to continued exposure to mercury? follow up mercury levels were not obtained. Re-exposure was not suspected.

Reviewer: Herman Jones Gibb
Reviewer's report:
Major Compulsory Revisions

There is no Table 1 as indicated on page 5. Corrected.
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) Corrected. (normal range: 0 and 10 µg/dL). 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. Corrected. (normal range: 0 and 10 µg/dL).

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 (page 5) without providing any support for their argument. 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?

The information given below was added to the case presentation section

“"The autopsy report disclosed a suspected mercury poisoning which might have led to cardiorespiratory collapse resulting in death of the infant.”"

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. Corrected as “the form and the route of entry to the organism”
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. Corrected as “prompts consideration of”