Reviewer's report

Title: Hypothyroidism Among Military Infants Born in Countries of Varied Iodine Nutrition Status

Version: 1 Date: 28 August 2009

Reviewer: Stephen H LaFranchi

Reviewer's report:

General comments

Cranston et al. investigate possible subtle iodine deficiency by comparing the incidence of hypothyroidism in infants born to military personnel in the United States with those born in Germany, Japan and US territories. The authors do not have any measurements of iodine, though some areas of Germany are reported to have low iodine intake and Japan is suspected to have high intake. The overall rate of hypothyroidism was not different in these 4 regions. Subjects were included based on ICD-9-CM codes from the 1st year of life for both congenital hypothyroidism and acquired hypothyroidism, reasoning that most infants diagnosed with hypothyroidism in the 1st year of life have congenital hypothyroidism. However, the overall incidence of 1:641 is 4-5 times more common than the birth prevalence of congenital hypothyroidism as reported by newborn screening programs (~1:3,000). This implies that many cases were missed by military newborn screening (unlikely), some cases really are acquired hypothyroidism (possible), or many cases were transient (likely – a point the authors make also). To examine this point further, I recommend that the investigators re-analyze congenital hypothyroidism and “acquired hypothyroidism” separately (in addition to the total group).

The investigators assume that the iodine intake of subjects’ mothers is representative of the population living in each geographic location. However, is it possible that some/many of these mothers took or were prescribed prenatal vitamins that contained iodine? This point needs to be addressed by the authors.

Specific comments (page numbers start with Title page = 1, Abstract = 2, etc.)

Abstract
1. Pg 2, line 3: suggest change “…subtle differences…” to “…subtle deficiencies…”
2. Pg 2, 7 lines from bottom: suggest “…and military sponsor’s (parent’s) race/ethnicity.”

Methods
3. Pg 6, 2nd paragraph re: “Hypothyroidism risk factors”: do the investigators have any information on prenatal vitamins (with iodine) intake of mothers? That is, are drugs listed in the database? If not, can they comment as to whether
prenatal vitamins are generally recommended to pregnant mothers in the military?

Results

4. Pg 8, top: as noted above, I would like to see the authors also undertake an analysis of the incidence of congenital and acquired hypothyroidism in the various geographic regions.

Discussion

5. Pg 10, 1st paragraph: re: incidence of hypothyroidism with sex of infant, multiple births, preterm births, maternal age, racial/ethnic make-up, etc., I recommend the authors include for comparison discussion the recent publication by: Harris KB, Pass KA. Increase in incidence of hypothyroidism in New York and in the United States. Mol Genet Metab 2007; 91:268-277.

**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.