Neonates of hypothyroid mothers have a below-normal head circumference

To the Editor:

Neonates of hypothyroid mothers are prone to develop neurologic abnormalities. We studied whether this finding is due to the underdevelopment of the brain size as measure by head circumference [1,2]. The number of reports on the head circumference of neonates of hypothyroid mothers is scarce and conflicting.

We compared 139 neonates (82 males, 57 females) of hypothyroid mothers aged 31 ± 4.4 years to a larger number of controls from a total of 18,538 deliveries at the Rabin Medical Center, Petah Tikva, Israel, between 1987 and 1993. Data on mothers and neonates were obtained from computerized medical records. The head circumference (i.e., brain size), body length, and weight of the neonates were measured by trained nurses at the neonatal department. Analysis of the data was conducted using analysis of variance (Anova).

The study was approved by the hospital ethics committee. The head circumferences of our control groups corresponded to those of the Canadian study by Barbier and colleagues [1].

The mean head circumference of the female neonates of hypothyroid mothers was significantly smaller than that of the male neonates (33.8 ± 1.4 cm, $P = 0.047$). Of the 139 newborns of hypothyroid mothers, we found data on head circumference related to gestational week for only 119. These results are shown in Table 1.

We found that in male newborns of hypothyroid mothers at gestational weeks 37 to 41, the head circumferences were significantly smaller than those of the newborns of healthy controls. For the female neonates, this finding is true only for the 38th week of gestation.

Our results indicate that, whereas birth length and weight of the offspring of hypothyroid mothers are normal for gestational age, the head circumference in female neonates is slightly smaller than that of the males. In addition, neonates of both sexes have a tendency for a smaller (head circumference) than that of the neonates of healthy mothers. Whether the smaller-than-normal circumference (i.e., brain size) at birth of newborns from hypothyroid mothers is an indicator of inadequacy of thyroid hormone replacement during pregnancy needs further study.

Table 1. Data on head circumference of hypothyroid mothers compared to healthy controls

	Gestational age, weeks	Hypothyroid mothers*		Healthy mothers**		*P* value§
		Head circumference, cm	n	Head circumference, cm	n	
Male neonates	37	34.3 ± 1.6		34.1 ± 1.3	1238	0.44
	38	34.4 ± 1.3	13	34.6 ± 1.3	2938	0.65
	39	34.2 ± 1.0	15	34.9 ± 1.2	4252	**0.022**
	40	34.6 ± 1.0	18	35.2 ± 1.2	3894	**0.036**
	41	34.9 ± 1.2	14	35.6 ± 1.2	1839	**0.039**
Female neonates	37	33.5 ± 1.7	4	33.6 ± 1.3	1213	0.88
	38	33.2 ± 0.9	8	34.0 ± 1.2	2980	**0.045**
	39	33.8 ± 1.1	16	34.3 ± 1.2	4260	0.07
	40	34.7 ± 1.2	15	34.6 ± 1.2	3796	0.65
	41	34.5 ± 1.6	7	34.9 ± 1.1	1780	0.39

§Bold indicates statistical significance

*Based on data from the neonatology department, Rabin Medical Center (Beilinson Campus), Petah Tikva, Israel

**Data from the Canadian Neonatal Network new reference curves for head circumference at birth, by gestational age [1]

References

1. Barbier A, Boivin A, Yoon W, et al.; Canadian Neonatal Network. New reference curves for head circumference at birth, by gestational age. *Pediatrics* 2013; 131 (4): e1158-67.
2. Lemons JA, Schreiner RL, Gresham EL. Relationship of brain weight to head circumference in early infancy. *Hum biol* 1981; 53 (3): 351-4.

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The possibility of transmitting infections with vaginal ultrasound probes: why the guidelines must be met

To the Editor:

In 2017, the Israeli Ministry of Health (MOH) issued guidelines for cleaning and disinfection of vaginal ultrasound (VUS) probes. These guidelines required high-level disinfection following each use based on the classification of VUS probes as semi-critical medical devices. In a review published in the January 2019 issue of the *Israeli Medical Association Journal* (*IMAJ*), Ben David and colleagues [1] claimed that they were unable to meet the guidelines. We take exception to this statement, for several reasons.

The authors cited a paucity of reports in the literature describing infections related to the use of VUS probes to support their claim that the MOH guidelines are unjustifiably strict.

Yet, this argument has at least two significant shortcomings: first, as the authors themselves stated, inadequately disinfected VUS probes may transmit viruses such as hepatitis A, hepatitis B, hepatitis C, human immunodeficiency virus (HIV), and human papillomavirus (HPV), pathogens that may not be detected for years. Given this fact, what is the likelihood that a clinical manifestation or incidental discovery of