First Trimester Thyroid Function Tests: Normative Data from Western India

Sir,

We read with great interest the systematic review on trimester-specific normative values for thyroid function tests in Indian pregnant women by Kannan *et al*.[1] We agree that there is a great need for trimester-specific reference ranges from different parts of India and note the lack of such data from the western part of India.[1] Hence, we have analyzed the available data from our previous study to derive reference ranges for thyroid function in first trimester.[2]

The study screened 483 pregnant women in the first trimester. Exclusion criteria included thyroid stimulating hormone (TSH) receptor antibody positivity (n = 3), family history of thyroid disorder (n = 12), known thyroid disorders on treatment (n = 10), goiter (n = 78), anti-thyroperoxidase (TPO) positivity (n = 60), overt hypothyroidism defined as TSH >10 μIU/ml (n = 3), and overt hyperthyroidism defined as TSH <0.01 μIU/ml (n = 14). A total of 137 women had at least one of the above exclusion criteria and were excluded from the analysis. The remaining 346 women were included in the analysis. Data was analysed using SPSS version 21 (IBM, Armonk, NY). The reference ranges for thyroid function tests are summarized in Table 1. Assay details of thyroid function tests and thyroid antibodies have been described previously.

The lower and upper limit of normal for thyroid function tests in the first trimester are summarized by Kannan *et al*. and vary across studies.[1] The lower and upper limit of normal for TSH and FT4 in first trimester were 0.09–1.92 μIU/ml, 0.64–0.93 ng/dl and 1.82–6.65 μIU/ml, 1.32–2.0 ng/dl, respectively. Our study reports a relatively lower lower limit of normal for first trimester TSH. Otherwise our study results were comparable to other studies from India.

The study was limited by lack of adequate data for establishing reference ranges for second and third trimester. Although pregnant women from Maharashtra are generally considered

Table 1: Thyroid function tests in first trimester

	Mean±SD	Median (2.5^{th}-97.5^{th} centile)
Serum thyroid stimulating hormone (μIU/ml)	1.31±1.11	1.05 (0.06-3.85)
Serum total thyroxine (μg/dl)	10.08±2.2	9.9 (6.47-14.9)
Serum total triiodothyronine (ng/dl)	135.8±36.94	128.1 (81.2-218)
Free triiodothyronine (pg/ml)	3.47±0.63	3.47 (2.37-4.72)
Free thyroxine (ng/dl)	1.26±0.23	1.23 (0.94-1.75)

iodine sufficient, iodine status of the study population was not evaluated.[3]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Vimal M. Nambiar, Anurag R. Lila, Tushar R. Bandgar, Nalini S. Shah

Department of Endocrinology, Seth GS Medical college and KEM Hospital, Mumbai, Maharashtra, India

Address for correspondence:
Dr. Tushar R. Bandgar,
Department of Endocrinology, Seth GS Medical college and KEM Hospital, Mumbai, Maharashtra, India.
E-mail: drtusharb@gmail.com

References

1. Kannan S, Mahadevan S, Sigamani A. A Systematic Review on Normative Values of Trimester-specific Thyroid Function Tests in Indian Women. Indian J Endocrinol Metab 2018;22:7-12.
2. Nambiar V, Jagtap VS, Sarathi V, Lila AR, Kamalanathan S, Bandgar TR, *et al*. Prevalence and impact of thyroid disorders on maternal outcome in Asian-Indian pregnant women. J Thyroid Res 2011;2011:429097.
3. Lean MI, Lean ME, Yajnik CS, Bhat DS, Joshi SM, Raut DA, *et al*. Iodine status during pregnancy in India and related neonatal and infant outcomes. Public Health Nutr 2014;17:1353-62.

Access this article online

Quick Response Code:

Website: www.ijem.in

DOI: 10.4103/ijem.IJEM_178_18

How to cite this article: Nambiar VM, Lila AR, Bandgar TR, Shah NS. First trimester thyroid function tests: Normative data from Western India. Indian J Endocr Metab 2018;22:574-5.