Serum Concentration of Selenium Among Normal Healthy Adult Women in the National Capital Territory (NCT) of Delhi

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Sir,
Selenium is an essential element; and in humans, the biological roles of selenium include the protection of tissues against oxidative stress, the maintenance of the body's defense systems against infection, and the modulation of growth and development [1]. There is increasing evidence that selenium deficiency is associated with cardiovascular disorders, hypothyroidism, impaired immune response, and even cancer [2, 3]. We do not have data on the status of selenium among Indian population.

We would like to report on the serum selenium levels among normal healthy adult women in the National Capital Territory of Delhi. We enrolled a total of 160 women who came to the outpatient department of a tertiary care hospital as attendant of their patients. Informed consent was taken from all the women. The study was ethically approved by the Ethics Committee of All India Institute of Medical Sciences, New Delhi. All subjects enrolled were healthy, nonsmokers, and with no morbidity at the time of survey. Of the women, 51 % belonged to upper lower and lower class as per the Kuppuswamy socioeconomic scale [4]. Five milliliter of venous blood was drawn and collected in previously labeled amber-colored polypropylene tubes from each subjects. Serum selenium was estimated by the standard atomic absorption spectrophotometry [5]. The results are expressed as micromole per liter.

The mean age of the subjects was 41 ± 10.34 years. Mean serum selenium levels estimated among normal healthy adult women was 3.34 ± 0.9 $\mu\text{mol/L}$. Serum selenium level ranged from 0.88 to 5.99 $\mu\text{mol/L}$. Table 1 depicts mean serum selenium levels in different age groups.

An earlier study documented the mean serum selenium level for healthy adult women (over 16 years of age) as 1.18 $\mu\text{mol/L}$ [6]. According to the World Health Organization

(WHO), the 0.8–1.1 $\mu\text{mol/L}$ level indicates selenium deficiency [1].

In our study, we found that only one woman had selenium deficiency as per the WHO criteria. Further studies with large sample size are needed to document the status of selenium among adults in India.

Table 1 Age group-wise distribution of serum selenium levels

Age group (years)	Total number of women (%)	Mean serum selenium levels ($\mu\text{mol/L}$)
<30	17 (10.6)	3.52
30–39	66 (40.6)	3.49
40–49	43 (26.9)	3.28
≥ 50	35 (21.9)	3.04
Total	160 (100)	3.34

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