

BLOOD AND URINE FLUORIDE AND IODINE, AND BLOOD THYROID FUNCTIONS TESTS IN 1ST TRIMESTER PREGNANT WOMEN IN PHAYAO PROVINCE, THAILAND

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SUMMARY: Nine provinces in the upper northern region of Thailand are geographically characterized by multiple mountain ranges with associated fluorite deposits which have been precipitated in a pattern of hydrothermal veins. The aims of the present study were to examine, in first trimester pregnant women living in 9 districts in Phayao province, the blood and urine levels of fluoride (F) and iodine, and the blood thyroid function tests. The sample numbered 152 women and the data were collected from August 1st, 2013 to October 31st, 2013. The results showed that 44.3% of the subjects were aged 26–35 years old, 60.0% had a gestational age from 8.1 to 12.0 weeks, 34.8% were secondary school graduates or held a vocational certificate, and 73.0% had lived in Phayao since birth. The proportion of subjects who had migrated to Phayao was 27.0% and of these 81.7% had subsequently lived in Phayao for more than 5 years. The mean urinary F was less than 0.2 µg/L which was lower than the standard reference value of 50.66 µg/L. All of the blood F levels were below the standard reference value. The mean urinary iodine level was 100 µg/L which was higher than the standard reference value of 88.82 µg/L. The level of free triiodothyronine (FT₃) was 2.0–4.4 pmol/L, with the mean being 20.39% of the standard reference value. The level of thyroid stimulating hormone (TSH) was 0.1–2.5 µIU/mL, with the mean being 39.47% of the standard reference value. The urinary iodine was positively correlated with the urinary F and the TSH, and negatively correlated with the FT₃. A negative correlation was present between the FT₃ and the TSH.

Key words: Blood fluoride; First trimester of pregnancy; FT₃; Phayao province, Thailand; TSH; Urinary fluoride; Urinary iodine;

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