

## ABSTRACT

### VALIDATION OF PALPATION METHOD TO THYROID VOLUME ENLARGEMENT BY ULTRASOUND AND IODINE CONTENT OF SALT AND WATER IN SIRAMPOG SUBDISTRICT, BREBES DISTRICT (A STUDY ON SCHOOLCHILDREN IN 2006)

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**Background:** There was a big difference in TGR (Total Goitre Rate) prevalence in 2004 IDD mapping by district (15.9%) and province authority (8.49%). Therefore palpation method needs to be validated to thyroid volume enlargement measured by ultrasound. Sirampog Subdistrict with the highest TGR in Brebes District (40.7%), was chosen for this study.

**Objective:** To assess the sensitivity and specificity of palpation method in comparison to ultrasound measurement and to assess the iodine content of salt and water which were consumed by the community.

**Methods:** A cross sectional survey was conducted on 100 schoolchildren of grade 4 to 6 from 2 rural villages in Sirampog Subdistrict, Brebes District. For the sensitivity and specificity analysis, 50% of the subjects were chosen randomly for thyroid measurements. Thyroid enlargements were assessed by trained health workers using palpation method, and by trained physicians using ultrasound. Urinary Iodine Excretions (UIE) were measured used acid digestion method, while iodine content of salt and water used titration method.

**Results:** TGR in Sirampog by palpation method was 29.0%. Based on ultrasound, 32.7% of the schoolchildren had larger thyroid volume than the upper limit by WHO 1997. There were some thyroid enlargements toward the back, which were not detected by palpation. Sensitivity and specificity of palpation method were 76.0 and 66.0%, respectively. The mean of UIE was 166.6  $\mu\text{g/L}$  and the median was 176.5 $\mu\text{g/L}$ . Two percents of the schoolchildren had mild and 11% had moderate Iodine deficiency based on their UIE. There was a correlation between iodine content of the salt consumed and UIE ( $r=0.237$ ,  $p=0.009$ ), but there was no correlation between iodine content of the water and UIE ( $r=-0.161$ ,  $p=0.055$ ).

**Conclusion:** Palpation method showed a relatively high false positive (24%) and false negative (34%). Based on UIE results, Sirampog was not a severe endemic goitre area anymore.

**Keywords:** IDD (Iodine Deficiency Disorders), TGR (Total Goitre Rate), thyroid volume, sensitivity, specificity