

## ABSTRAK

### HUBUNGAN STATUS IODIUM DAN FUNGSI TIROID IBU HAMIL TRIMESTER III DENGAN STATUS IODIUM DAN NILAI ANTROPOMETRI BAYI BARU LAHIR DI DAERAH GAKI (Studi di Kabupaten Temanggung)

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**Latar Belakang :** Iodium esensial untuk sintesa hormon tiroid. Ibu hamil rentan kekurangan iodium karena mengalami perubahan metabolik dan hormonal. Defisiensi iodium pada ibu hamil berdampak pada tumbuh kembang janin. Determinan dari kelanjutan hidup bayi baru lahir dan kualitas hidupnya dapat dilihat dari keadaan bayi saat dilahirkan dinilai berdasar ukuran proporsi tubuh saat lahir. Hubungan iodium dan nilai antropometri bayi ini belum diketahui dengan pasti.

**Tujuan :** Menjelaskan pengaruh status iodium dan fungsi tiroid ibu hamil trimester III dengan status iodium dan nilai antropometri bayi baru lahir.

**Metode :** Penelitian menggunakan desain studi *non experimental* rancangan *cross sectional* dengan *longitudinal method* pada 52 ibu hamil trimester III beserta bayinya. Pemeriksaan kadar *thyroid stimulating hormone* (TSH) untuk mengukur fungsi tiroid dan *Urinary Excretion of Iodine* (UEI) untuk pemeriksaan status iodium. Pada bayi baru lahir dilakukan pemeriksaan UEI dan pengukuran antropometri, meliputi berat badan (BB), panjang badan (PB) dan lingkaran kepala (LK).

**Hasil :** Ada hubungan yang bermakna antara UEI ibu dengan PB bayi baru lahir ( $p=0,018$ ). Tidak ada hubungan yang bermakna antara UEI ibu dengan UEI bayi ( $p=1,000$ ), UEI ibu dengan BB bayi ( $p=0,548$ ), UEI ibu dengan LK bayi ( $p=0,885$ ), TSH ibu dengan UEI bayi ( $p=0,370$ ), TSH ibu dengan BB bayi ( $p=0,831$ ), TSH dengan PB bayi ( $p=0,167$ ) dan TSH dengan LK bayi ( $p=0,538$ ).

**Simpulan :** Hubungan status iodium ibu hamil trimester III  $<150 \mu\text{g/L}$  dengan PB bayi baru lahir  $<48 \text{ cm}$  bermakna, namun tidak berhubungan bermakna dengan UEI bayi  $<100 \mu\text{g/L}$ , BB  $<2500 \text{ gram}$  dan LK  $<34 \text{ cm}$ . Hubungan tidak bermakna antara fungsi tiroid ibu hamil trimester III  $> 5.2 \mu\text{U/mL}$  dengan UEI  $<100 \mu\text{g/L}$ , BB  $<2500 \text{ gram}$ , PB  $<48 \text{ cm}$  dan LK  $<34 \text{ cm}$ .

**Kata Kunci :** UEI, TSH, BB, PB, LK

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## ABSTRACT

### THE CORRELATION BETWEEN IODINE STATUS AND THYROID FUNCTION IN THIRD TRIMESTER PREGNANCY WOMEN ON NEWBORN IODINE STATUS AND ANTHROPOMETRIC VALUES IN IDD AREAS (Study in Temanggung Regency)

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**Background:** Iodine essential for thyroid hormone synthesis. Women in their pregnancy are susceptible of Iodine Deficiency Disorder (IDD) since they are facing metabolism and hormonal alteration. IDD in pregnant women gave bad impact to the growth and development of the fetus. Determinant of the life continuity of the newborn babies and their life qualities could be seen through the newborn baby condition based on their body size proportions right after the birth. The correlation between iodine and anthropometric values of the newborn babies is not known yet.

**Objective :** Explaining the impact of the iodine status and thyroid function of the pregnant women in their third trimester to the iodine status and anthropometric values of the newborn babies.

**Method :** This research used non experimental study design cross sectional with longitudinal method to 52 pregnant women in their third trimester with the babies. The thyroid stimulating hormone (TSH) examination was done to seize the thyroid function and *Urinary Excretion of Iodine* (UEI) for the examination of iodine status. To the newborn babies, UEI examination and anthropometric measurement, consists of weight birth (WB), length birth (LB), head circumference (HC) were done.

**Result :** There is a significant correlation between the mothers' UEI and the LB of the newborn babies ( $p=0,018$ ). There is no significant correlation between mothers' UEI and the babies' UEI ( $p=1,000$ ), mothers' UEI and the WB of the newborn babies ( $p=0,548$ ), mothers' UEI and the newborn babies' HC ( $p=0,885$ ), mothers' TSH and the newborn babies' UEI ( $p=0,370$ ), mothers' TSH and the newborn babies' WB ( $p=0,831$ ), TSH and the newborn babies' LB ( $p=0,167$ ), TSH and the HC of the newborn babies ( $p=0,538$ ).

**Conclusion :** There is a significant correlation iodine status of the pregnant women in their third trimester  $<150 \mu\text{g/L}$  with the LB of the newborn babies  $<48 \text{ cm}$ , but there is no significant correlation with the UEI of the newborn babies  $<100 \mu\text{g/L}$ , WB  $<2500 \text{ gram}$  and HC  $<34 \text{ cm}$ . The correlation is not significant between the thyroid function of the pregnant women in their third trimester  $> 5.2 \mu\text{U/mL}$  with UEI  $<100 \mu\text{g/L}$ , WB  $<2500 \text{ grams}$ , LB  $<48 \text{ cm}$  and HC  $<34 \text{ cm}$ .

**Keywords :** UEI, TSH, WB, LB, HC

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