

ABSTRACT

ANALYSIS OF THE RELATIONSHIP BETWEEN BIRTH WEIGHT OF ATERM INFANTS AND TSH (*Thyroid Stimulating Hormone*) LEVELS FROM CONGENITAL HYPOTHYROIDISM SCREENING IN LAMPUNG PROVINCE, JANUARY–MARCH 2025

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Background: Congenital hypothyroidism is the most common endocrine disorder in neonates and can lead to developmental impairment if not detected early. TSH examination serves as the primary screening method as it reflects thyroid function. In Indonesia, the prevalence is approximately 1 in 1,167 births. However, screening coverage remains low. In Lampung Province, the screening program has been implemented since 2016, and studies examining the association between birth weight and TSH levels in term infants are still limited. Factors such as birth weight, gestational age, and maternal conditions are thought to have an influence, although previous research findings remain variable. This study was conducted to assess TSH levels, the distribution of birth weight, and their relationship among term infants undergoing congenital hypothyroidism screening during the period of January–March 2025.

Methods: This study is an analytical observational research employing a quantitative design with a *cross-sectional* approach to examine the relationship between birth weight and TSH (*Thyroid Stimulating Hormone*) levels from congenital hypothyroidism screening among term infants in Lampung Province during January–March 2025.

Results: *The Spearman correlation* test on 426 infants showed a very weak negative correlation between TSH levels and birth weight ($r = -0.108$) with a significance value of $p = 0.026$ ($p < 0.05$). This negative relationship indicates that an increase in birth weight tends to be associated with a decrease in TSH levels, and vice versa, although the strength of the correlation is low.

Conclusions: : This study shows that TSH levels among term infants in Lampung are generally within the normal range, with a very low prevalence of congenital hypothyroidism. Most infants had normal birth weight, with only a few classified as low or high birth weight. A very weak negative correlation was found between birth weight and TSH levels, indicating that birth weight has a minimal influence on TSH variation.

Keywords: Congenital Hypothyroidism, Aterm, *Thyroid Stimulating Hormone*

ABSTRAK

ANALISIS HUBUNGAN ANTARA BERAT BADAN LAHIR BAYI ATERM DENGAN KADAR TSH (*Thyroid Stimulating Hormone*) HASIL SKRINING HIPOTIROID KONGENITAL DI PROVINSI LAMPUNG BULAN JANUARI- MARET 2025

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Latar Belakang: Hipotiroid kongenital adalah kelainan endokrin tersering pada neonatus dan dapat menyebabkan gangguan perkembangan bila tidak terdeteksi dini. Pemeriksaan SHK menjadi metode skrining utama karena mencerminkan fungsi tiroid. Di Indonesia prevalensinya sekitar 1:1.167 kelahiran, namun cakupan skrining masih rendah. Di Provinsi Lampung, program skrining baru berjalan sejak 2016 dan penelitian mengenai keterkaitan berat badan lahir dengan kadar TSH pada bayi aterm masih terbatas. Faktor seperti berat badan lahir, usia gestasi, dan kondisi maternal lainnya diduga berpengaruh, tetapi hasil penelitian sebelumnya masih bervariasi. Penelitian ini dilakukan untuk menilai kadar TSH, distribusi berat badan lahir, serta hubungan keduanya pada bayi aterm yang menjalani skrining hipotiroid kongenital periode Januari–Maret 2025.

Metode: Penelitian ini merupakan penelitian analitik observasional dengan menggunakan desain kuantitatif dan pendekatan *cross-sectional* mengenai hubungan antara berat badan lahir bayi aterm dengan kadar TSH (*Thyroid Stimulating Hormone*) hasil skrining hipotiroid kongenital di Provinsi Lampung bulan Januari-Maret 2025.

Hasil: Hasil uji korelasi *Spearman* pada 426 bayi menunjukkan adanya hubungan negatif yang sangat lemah antara kadar TSH dan berat badan lahir ($r = -0,108$) dengan nilai signifikansi $p = 0,026$ ($p < 0,05$). Hubungan negatif ini mengindikasikan bahwa peningkatan berat badan bayi cenderung diikuti penurunan kadar TSH dan sebaliknya, meskipun kekuatan hubungannya rendah.

Kesimpulan: Penelitian ini menunjukkan bahwa kadar TSH pada bayi aterm di Lampung umumnya normal dengan prevalensi hipotiroid kongenital yang sangat rendah. Sebagian besar bayi memiliki berat badan lahir normal, dan hanya sedikit yang termasuk BBLR atau BBL. Terdapat hubungan negatif yang sangat lemah antara berat badan lahir dan kadar TSH, menunjukkan bahwa berat badan berpengaruh kecil terhadap variasi kadar TSH.

Kata Kunci: Hipotiroid Kongenital, Aterm, *Thyroid Stimulating Hormone*