

**PERBEDAAN RASIO KADAR T4/T3 TOTAL ANTARA KARSINOMA TIROID  
TERDIFERENSIASI DIBANDINGKAN DENGAN NODUL TIROID JINAK**

Seno Aji Saputro<sup>1</sup>, Camelia Herdini<sup>2</sup>, Bambang Udji Djoko Rianto<sup>3</sup>

Bagian Telinga Hidung Tenggorok-Bedah Kepala Leher<sup>123</sup>

Fakultas Kedokteran Universitas Gadjah Mada/RSUP Dr. Sardjito Yogyakarta

**INTISARI**

**Latar Belakang :** Karsinoma tiroid terdiferensiasi (Karsinoma papiler dan karsinoma folikuler tiroid) adalah keganasan kepala leher yang sering terjadi. Terdapat ekspresi *iodothyronine deiodinase* tipe 1 dan tipe 2 yang terganggu sehingga menurunkan konversi dari status T4 tidak aktif ke status aktif T3. Rasio T4/T3 total menjadi meningkat meskipun nilai T4 total dan T3 total tampak masih dalam nilai ambang batas normal. Rasio T4/T3 Total memiliki nilai diagnosis dan dapat membantu dalam pencegahan, diagnosis dan tatalaksana karsinoma tiroid

**Tujuan Penelitian :** Penelitian ini bertujuan untuk mengetahui perbedaan rasio T4/T3 total antara karsinoma tiroid terdiferensiasi dan pembesaran tiroid jinak.

**Metode Penelitian :** Penelitian ini adalah *case control study* (studi kasus-kontrol). Sampel penelitian adalah penderita pembesaran tiroid yang menjalani operasi tiroidektomi di RSUP. Dr. Sardjito Yogyakarta tahun 2016 hingga sampel terpenuhi dan dilakukan pemeriksaan histopatologi. Kadar T4 total dan T3 total diambil dari pemeriksaan darah sebelum dilakukan operasi tiroidektomi. Perbedaan rasio T4/T3 total dianalisis pada masing-masing kelompok dan antar kelompok penelitian.

**Hasil:** Sampel penelitian berjumlah 52 pasien yang menjalani tiroidektomi, masing-masing kelompok terdiri dari 26 pasien. Terdapat perbedaan yang bermakna rasio T4/T3 total antara karsinoma tiroid terdiferensiasi dengan pembesaran tiroid jinak dengan nilai  $p = 0,001$  dan *Rasio Odds* (RO) 9,6 (IK 95% 2,30-40,1) (rasio T4/T3 total  $\leq 6,9$  dibandingkan  $> 6,9$ ). Disamping itu, didapatkan juga perbedaan yang signifikan rerata kadar T3 total yang lebih rendah antara karsinoma tiroid dan nodul tiroid jinak dengan nilai  $p = 0,005$

**Kesimpulan:** Terdapat perbedaan yang bermakna rasio T4/T3 total pada karsinoma tiroid terdiferensiasi dibandingkan dengan nodul tiroid jinak.

**Kata kunci :** pembesaran tiroid, karsinoma tiroid terdiferensiasi, rasio T4/T3 total , tiroidektomi, histopatologi

## TOTAL T4/T3 LEVEL RATIO DIFFERENCES BETWEEN DIFFERENTIATED THYROID CARCINOMA COMPARED WITH BENIGN THYROID ENLARGEMENT

Seno Aji Saputro<sup>1</sup> Camelia Herdini<sup>2</sup>, Bambang Udji Djoko Rianto<sup>3</sup>  
Otorhinolaringology-Head and Neck Surgery Department<sup>1,2,3</sup>  
School of Medicine Universitas Gadjah Mada / RSUP Dr. Sardjito Yogyakarta

### ABSTRACT

**Background:** Differentiated thyroid carcinomas (Papillary and follicular carcinoma thyroid carcinoma) are common head and neck cancer. There is impaired expression of iodothyronine deiodinase type 1 and type 2 thereby reducing conversion from an inactive T4 state to an active T3 state. The total T4/T3 ratio increases even though the total T4 and total T3 values appear to be within the normal threshold value. The Total T4/T3 ratio has diagnostic value and can assist in the prevention, diagnosis and management of thyroid carcinoma.

**Objective:** The objective of our study is determining the difference in the total T4/T3 ratio between differentiated thyroid carcinoma and benign thyroid enlargement

**Methods:** This case-control study will recruit subjects who underwent thyroidectomies for his/her thyroid enlargement at Dr Sardjito general hospital, Yogyakarta, from 2016 until the sample is met. Histopatological examination, which determined the histopatology characteristic, from pathology department had been reported on medical record. Total T4 and total T3 levels were taken before the thyroidectomies. Total T4 and total T3 levels and histopatology will be analysed among and between groups.

**Results :** The study sample consisted of 52 patients who underwent thyroidectomy, each group consisted of 26 patients. There was a significant difference in the total T4/T3 ratio between differentiated thyroid carcinoma and benign thyroid enlargement with p value = 0.001 and Odds Ratio (RO) 9.6 (95% CI 2.30-40.1) (total T4/T3 ratio  $\leq 6.9$  versus  $> 6.9$ ). In addition, there was also a lower significant difference in the mean Total T3 levels between thyroid carcinoma and benign thyroid nodules with p value = 0.005

**Conclusion:** There is a significant difference in the total T4/T3 ratio in differentiated thyroid carcinoma compared to benign thyroid enlargement.

**Keywords:** thyroid enlargement, differentiated thyroid carcinoma, total T4/T3 ratio, thyroidectomy, histopathology