

**PERBANDINGAN NILAI INDEKS RICERCA SEBAGAI METODE
SKRINING TALASEMIA BETA MINOR DAN ANEMIA DEFISIENSI BESI
DI RSUD PROF. DR. MARGONO SOEKARJO**

ABSTRAK

Latar Belakang: Talasemia beta minor dan anemia defisiensi besi (ADB) merupakan penyebab tersering anemia mikrositik hipokromik dengan gambaran laboratorium yang serupa namun memerlukan tatalaksana berbeda, sehingga seringkali terdapat kesulitan membedakan kedua kondisi tersebut. Indeks Ricerca merupakan metode skrining sederhana berbasis parameter RDW dan RBC yang dapat membedakan talasemia beta minor dan ADB. **Tujuan:** Menganalisis *cut-off* optimal, sensitivitas, spesifisitas, *positive predictive value* (PPV), *negative predictive value* (NPV), dan akurasi diagnostik indeks Ricerca dalam membedakan talasemia beta minor dan anemia defisiensi besi di RSUD Prof. Dr. Margono Soekarjo. **Metode:** Penelitian observasional analitik, desain *cross-sectional* dengan *consecutive sampling* menggunakan data sekunder rekam medis, usia ≤ 18 tahun periode 2020-2025, dan didapatkan 40 subjek talasemia beta minor serta 40 subjek ADB. Nilai indeks Ricerca dihitung menggunakan rumus RDW/RBC. Analisis uji diagnostik indeks Ricerca dilakukan menggunakan kurva *Receiver Operating Characteristic* (ROC). **Hasil:** Terdapat perbedaan signifikan pada distribusi usia subjek penelitian, nilai Hb dan RBC, serta nilai indeks Ricerca kedua kelompok ($p < 0,001$). Nilai *cut-off* optimal indeks Ricerca adalah $< 4,3$ untuk talasemia beta minor dan $> 4,3$ untuk ADB. Nilai *Area Under the Curve* (AUC) sebesar 0,861 (95% CI: 0,776-0,945; $p < 0,001$). Nilai sensitivitas, spesifisitas, PPV, NPV indeks Ricerca untuk talasemia beta minor masing-masing adalah 77,50%; 80,00%; 79,49%; dan 78,05%, sedangkan untuk ADB adalah 80,00%; 77,50%; 78,05% dan 79,49%, dengan indeks Youden 0,58. **Kesimpulan:** Indeks Ricerca memiliki performa diagnostik yang baik dengan akurasi 86,1% sehingga dapat digunakan sebagai metode skrining untuk membedakan talasemia beta minor dan ADB.

Kata kunci: anemia defisiensi besi, anemia mikrositik hipokromik, indeks Ricerca, RBC, RDW, talasemia beta minor

**COMPARISON OF RICERCA INDEX VALUES AS A SCREENING
METHOD FOR BETA THALASSEMIA MINOR AND IRON DEFICIENCY
ANEMIA AT PROF. DR. MARGONO SOEKARJO HOSPITAL**

ABSTRACT

Background: Beta thalassemia minor and iron deficiency anemia (IDA) are the most common causes of microcytic hypochromic anemia with similar laboratory features but require different management approaches, making differentiation between these two conditions often challenging. The Ricerca index is a simple screening method based on RDW and RBC parameters that can distinguish beta thalassemia minor from IDA. **Objective:** To analyze the optimal cut-off, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and diagnostic accuracy of the Ricerca index in differentiating beta thalassemia minor from iron deficiency anemia at Prof. Dr. Margono Soekarjo Regional General Hospital. **Methods:** This was an analytical observational study with cross-sectional design using consecutive sampling from secondary data of medical records of patients aged ≤ 18 years during the 2020-2025 period, obtaining 40 subjects with beta thalassemia minor and 40 subjects with IDA. The Ricerca index value was calculated using the RDW/RBC formula. Diagnostic test analysis of the Ricerca index was performed using Receiver Operating Characteristic (ROC) curve. **Results:** There were significant differences in the distribution of subject age, Hb and RBC values, and Ricerca index values between both groups ($p < 0.001$). The optimal cut-off value of the Ricerca index was < 4.3 for beta thalassemia minor and > 4.3 for IDA. The Area Under the Curve (AUC) value was 0.861 (95% CI: 0.776-0.945; $p < 0.001$). The sensitivity, specificity, PPV, and NPV of the Ricerca index for beta thalassemia minor were 77.50%, 80.00%, 79.49%, and 78.05%, respectively, while for IDA they were 80.00%, 77.50%, 78.05%, and 79.49%, with a Youden index of 0.58. **Conclusion:** The Ricerca index has good diagnostic performance with an accuracy of 86.1%, making it suitable for use as a screening method to differentiate beta thalassemia minor from IDA.

Keywords: beta thalassemia minor, iron deficiency anemia, microcytic hypochromic anemia, RBC, RDW, Ricerca index