

VALIDITAS DIAGNOSTIK *RETICULOCYTE HEMOGLOBIN EQUIVALENT* (RET-He) UNTUK DETEKSI DEFISIENSI BESI PADA REMAJA PUTRI

INTISARI

Latar belakang: Remaja putri sangat berpotensi terkena defisiensi besi, karena kebutuhan zat besi yang meningkat yang tidak diimbangi dengan pemasukan zat besi. Prevalensi remaja putri mengalami defisiensi besi di Indonesia sekitar 27,2%. Defisiensi besi pada remaja dapat menyebabkan defisit kognitif dan perilaku, mengganggu perkembangan psikomotorik, meningkatkan morbiditas penyakit menular, dan mengurangi skor tes kecerdasan (IQ). Parameter RET-He (Retikulosit hemoglobin ekuivalen) merupakan pemeriksaan sederhana, murah, cepat, dan praktis, yang dapat menilai adanya defisiensi besi sebelum anemia defisiensi besi terjadi.

Tujuan: Penelitian ini bertujuan untuk mengetahui penampilan diagnostik RET-He untuk deteksi defisiensi besi pada remaja putri.

Metode: Penelitian ini adalah uji diagnostik dengan rancangan potong lintang (*cross sectional*). Subjek penelitian adalah remaja putri yang menjalani pemeriksaan *general medical check-up* di Departemen Patologi Klinik dan Kedokteran Laboratorium FK-KMK/Instalasi Laboratorium Terpadu RSUP Dr. Sardjito Yogyakarta. Parameter RET-He diperiksa dengan alat Sysmex XN1000 analyzer. Analisis statistik deskriptif yang digunakan berupa median (min-maks), uji beda dengan *Mann Whitney test*, dan ROC untuk sensitivitas dan spesifisitas.

Hasil: Subjek penelitian pada penelitian ini berjumlah 206 yang diambil dari remaja putri yang sekolah di SMK di Kecamatan Prambanan, Kabupaten Sleman yang memenuhi kriteria inklusi dan eksklusi. Berdasarkan standart baku feritin, subjek dibagi menjadi 2 kelompok, yaitu defisiensi besi sebanyak 93 orang dan kelompok normal 113 orang. Titik potong pada kurva ROC yang menunjukkan *cut-off* optimal terdapat pada 27,6 pg, dengan sensitivitas 93,55% dan spesifisitas 63,72%.

Simpulan: Pada *cut-off* 27,6 pg, RET-He dapat mendeteksi defisiensi besi pada remaja putri.

Kata kunci: defisiensi besi, Anemia Defisiensi Besi, remaja putri, RET-He

DIAGNOSTIC VALIDITY OF RETICULOCYTE HEMOGLOBIN EQUIVALENT (RET-He) FOR DETECTION OF IRON DEFICIENCY IN FEMALE ADOLESCENTS

ABSTRACT

Background: Female adolescents are at risk for having iron deficiency because of increasing iron demand which are not met with sufficient intake. The prevalence of female adolescents suffering iron deficiency are around 27.2%. Iron deficiency in adolescents can cause cognitive and behavioral deficits, psychomotor development disturbance, higher morbidity in infectious diseases and reducing IQ Score. Reticulocyte Hemoglobin Equivalent (RET-He) is a simple, cheap, fast and practical examination which can detect iron deficiency state in patients before they develop into iron deficiency anemia.

Aims: This study aimed to observe diagnostic utility of RET-He parameter in detecting iron deficiency state among female adolescents.

Method: This was a diagnostic study using cross sectional design. Subjects included in this study were female adolescent underwent general medical check up in Department of Clinical Pathology and Laboratory Medicine in FKMK UGM and Clinical Laboratory Installation of Dr Sardjito General Hospital Yogyakarta. Sysmex XN 1000 Hematology Analyzer was used to analyze RET-He in samples. Descriptive analytical statistic was used, data were presented as mean \pm SD or median (minimum-maximum value), independent t-test and Mann Whitney were also carried out. Sensitivity and specificity were analyzed using receiver operating characteristic (ROC) curve.

Result: number of subjects in this study was 206 female adolescents from Senior High School in Prambanan, Sleman who fulfilled the inclusion and exclusion criteria. According to ferritin level, the gold standard, subjects were divided into 2 group, iron deficient (93 subjects) and normal group (113 subjects). Cutoff value of ROC that showed optimal value is 27,6 pg (sensitivity 93,55% and specificity 63,72%).

Conclusion: With cut off of 27,6 pg, RET-He can detect iron deficiency in female adolescents

Keywords: iron deficiency, iron deficiency anemia, female adolescents, RET-He