

INTISARI

Latar belakang: Pemeriksaan darah rutin merupakan permintaan laboratorium terbanyak pada hampir semua pasien di rumah sakit untuk skrining, diagnosis dan tatalaksana pasien. Pemeriksaan darah rutin otomatis dengan *automated hematology analyzer* belum secara merata dapat dilaksanakan oleh pusat pelayanan kesehatan di Indonesia karena berbagai kendala. Solusi yang dapat ditempuh yaitu optimalisasi fungsi mikroskop dan komputer dengan penambahan kamera digital dan *software* yang mampu mengidentifikasi sel darah. *Software* tersebut belum diketahui hasil kesepakatan identifikasi lekosit matur dibandingkan dokter residen Patologi Klinik tahap mandiri dan hasil kesepakatan persentase hitung jenis lekosit dengan *automated hematology analyzer*.

Tujuan: Menilai kesepakatan identifikasi lekosit matur oleh *software* Cidar dibandingkan dokter residen Patologi Klinik tahap mandiri dan menilai kesepakatan hasil persentase hitung jenis lekosit oleh *software* Cidar dengan *automated hematology analyzer*.

Metode: Penelitian ini merupakan penelitian observasional berdesain potong lintang. Subjek penelitian berupa citra digital lekosit dari apusan darah tepi sampel EDTA mahasiswa Fakultas Teknik Universitas Gadjah Mada Yogyakarta, mahasiswa analis kesehatan Politeknik Kesehatan Kementerian Kesehatan Semarang dan Pasien RSUP Dr. Sardjito Yogyakarta.

Hasil: Hasil analisis *confussion matrix* untuk uji kesepakatan identifikasi lekosit matur *software* Cidar pewarnaan Wright memiliki *overall accuracy* 88,6%, *error rate* 11,4% dan Kappa 0,8. *Software* Cidar pada citra digital lekosit pewarnaan Giemsa memiliki nilai *overall accuracy* 88 %, *error rate* 12 % dan Kappa 0,8. Hasil analisis Bland Altman limfosit dan netrofil memiliki bias yang besar dan terdapat bias konstanta untuk persentase limfosit dan monosit pada analisis regresi Passing Bablok.

Simpulan: Terdapat kesepakatan yang baik antara identifikasi lekosit matur oleh *software* Cidar dengan dokter residen Patologi Klinik tahap mandiri. *Software* Cidar belum dapat diaplikasikan untuk persentase hitung jenis lekosit pada individu.

Kata kunci: pemeriksaan darah rutin, *automated hematology analyzer*, *software* Cidar, identifikasi lekosit, persentase hitung jenis lekosit

ABSTRACT

Background: Routine blood examination is the most laboratory requested in almost all patients in the hospital for screening, diagnosis and management of patients. Routine blood examination performed by automated hematology analyzer has not been evenly implemented by health service centers in Indonesia due to various problem. The solution effort is by optimizing the function of microscope and computer with addition of digital camera and software has capabilities for blood cell identification. The software has not known agreement results of mature leukocyte identification compared to resident of clinical pathology independent stage and result agreement of calculate the percentage of leukocytes type with automated hematology analyzer.

Objective: Assessing mature leukocyte identification agreement by Cidar software versus resident of clinical pathology independent stage and to assess calculated percentage of leukocyte type agreement by Cidar software versus automated hematology analyzer.

Method: This was an observational study of cross sectional design. Research subjects was digital image leukocytes from blood smear EDTA samples of faculty students of Engineering, Universitas Gadjah Mada Yogyakarta, students of Health Polytechnic Ministry of Health Semarang and Patient at RSUP Dr. Sardjito Yogyakarta.

Result: The result of confusion matrix analysis for mature leukocytes identification test of software Cidar at Wright staining has 88,6% of an overall accuracy, 11,4% of error rate and 0,8 of Kappa. Cidar software on digital images of leukocyte at Giemsa staining has 88% of an overall accuracy, 12% of error rate and 0.8 of Kappa. The results of Bland Altman's analysis was lymphocytes and neutrophils has a large bias and there was a constant bias for lymphocyte and monocyte percentages in regression analysis of Passing Bablok.

Conclusion: There was a good agreement between mature leukocyte identification by Cidar software with resident of clinical pathology independent stage. Cidar software can not be applied to calculate the percentage of leukocytes type in individuals.

Keywords: *routine blood examination, automated hematology analyzer, Cidar software, leukocyte identification, the percentage of leukocyte count*