Tesis

NILAI DIAGNOSTIK *CARCINOEMBRYONIC ANTIGEN, CANCER ANTIGEN* 125 DAN SKOR *ASIA PASIFIC COLORECTAL SCREENING* SEBAGAI PENANDA KEGANASAN PADA KANKER KOLOREKTAL

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ABSTRAK

Latar Belakang : Kanker kolorektal menjadi kanker paling umum ketiga didunia dan keempat di Indonesia. Kanker kolorektal sebagian besar terdeteksi pada stadium lanjut. Metode pemeriksaan yang murah dan non invasif saat ini diusulkan untuk mendiagnosa kanker kolorektal. Penanda tumor tunggal memiliki sensitivitas atau spesifisitas yang rendah. Penggabungan beberapa parameter dapat meningkatkan sensitivitas, spesifisitas, dan akurasi. Kombinasi sistem penilaian risiko (skor APCS) dan penanda tumor (CEA dan CA 125) berpotensi menjadi pendekatan yang efektif untuk penegakkan diagnosis kanker kolorektal.

Metode : Penelitian analitik dengan pendekatan potong lintang dilakukan pada 45 pasien dengan diagnosis suspek tumor kolorektal sejak Maret sampai September 2024. Pemeriksaan CEA dan CA 125 menggunakan spesimen serum dengan metode ELFA. Skor APCS dihitung dengan kalkulator yang di kategorikan menjadi skor risiko rendah, sedang dan tinggi. Pemeriksaan *gold standard* penelitian ini adalah pemeriksaan histopatologi. Kurva ROC digunakan untuk menunjukkan besaran nilai sensitivitas dan 1-spesifisitas. Penentuan nilai *cut-off I* berdasarkan kurva *Youden Index.* Analisis statistik terhadap uji diagnostik diperoleh sensitivitas, spesifisitas, *positive predictive value* dan *negative predictive value.*

Hasil : Usia subjek penelitian pada kanker kolorektal adalah 50-69 tahun. Rerata nilai CEA serum pada kanker kolorektal 51,75 (77,65) ng/mL dan CA 125 serum pada kanker kolorektal 46,38 (75,47) U/mL. Proporsi skor APCS pada kanker kolorektal risiko sedang 2 (40%) dan risiko tinggi 21 (52,5%) Analisis nilai *cut off* CEA serum ditemukan sebesar 4,735 dengan AUC 0,804 (95% IC), CA 125 sebesar 13,135 dengan AUC 0,65 (95% IC), skor APCS sebesar 4,5 dengan AUC 0,44 (95% IC). Analisis uji diagnostik nilai CEA serum pada kanker kolorektal diperoleh sensitivitas 73,9%, spesifisitas 72,7%, PPV 73,91%, dan NPV 73,33%. Nilai diagnostik CA 125 serum pada kanker kolorektal diperoleh sensitivitas 65,2%, spesifisitas 68,2%, PPV 68,18%, dan NPV 65,22%. Nilai diagnostik skor APCS pada kanker kolorektal diperoleh sensitivitas 47,8%, spesifisitas 40,9%, PPV 57,14%, dan NPV 54,17%. Nilai diagnostik kombinasi CEA serum, CA 125 serum dan skor APCS pada kanker kolorektal diperoleh sensitivitas 82,6%, spesifisitas 81,8%, PPV 81,82% dan NPV 82,61%.

Simpulan : Kombinasi CEA serum, CA 125 serum dan skor APCS mempunyai nilai diagnostik yang baik sehingga dapat digunakan sebagai penanda keganasan pada kanker kolorektal

Kata Kunci : CEA, CA 125, APCS, kanker kolorektal

DIAGNOSTIC VALUE OF CARCINOEMBRYONIC ANTIGEN, CANCER ANTIGEN 125 AND ASIA PACIFIC COLORECTAL SCREENING SCORE AS MARKERS OF MALIGNANCY IN COLORECTAL CANCER

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ABSTRACT

Background: *Colorectal cancer is the third most common cancer worldwide and fourth in Indonesia. Colorectal cancer is mostly detected at an advanced stage. Inexpensive and non-invasive screening methods are currently proposed to diagnose colorectal cancer. Single tumour markers have low sensitivity or specificity. Combination of multiple parameters can improve sensitivity, specificity and accuracy. The combination of risk scoring system (APCS score) and tumour markers (CEA and CA 125) has the potential to be an effective approach for the diagnosis of colorectal cancer.*

Methods: *Analytical study with a cross-sectional approach was conducted on 45 patients with a diagnosis of suspected colorectal tumour from March to September 2024. CEA and CA 125 examination using serum specimens with ELFA method. APCS score was calculated using a calculator and categorised into low, medium and high risk scores. The gold standard examination in this study was histopathological examination. The ROC curve was used to show the sensitivity and 1-specificity values. Determination of the cut-off value I was based on the Youden Index curve. Statistical analysis of diagnostic tests obtained sensitivity, specificity, positive predictive value and negative predictive value.*

Results: *The age of the study subjects in colorectal cancer was 50-69 years. The mean value of serum CEA in colorectal cancer was 51.75 (77.65) ng/mL and serum CA 125 in colorectal cancer was 46.38 (75.47) U/mL. The proportion of APCS score in moderate risk colorectal cancer 2 (40%) and high risk 21 (52.5%) Analysis of serum CEA cut off value was found to be 4.735 with AUC 0.804 (95% IC), CA 125 was 13.135 with AUC 0.65 (95% IC), APCS score was 4.5 with AUC 0.44 (95% IC). Analysis of the diagnostic test of serum CEA value in colorectal cancer obtained a sensitivity of 73.9%, specificity of 72.7%, PPV 73.91%, and NPV 73.33%. The diagnostic value of serum CA 125 in colorectal cancer obtained a sensitivity of 65.2%, specificity of 68.2%, PPV of 68.18%, and NPV of 65.22%. The diagnostic value of APCS score in colorectal cancer obtained a sensitivity of 47.8%, specificity of 40.9%, PPV of 57.14%, and NPV of 54.17%. The combined diagnostic value of serum CEA, serum CA 125 and APCS score in colorectal cancer obtained a sensitivity of 82.6%, specificity of 81.8%, PPV 81.82% and NPV 82.61%.*

Conclusion*: The combination of serum CEA, serum CA 125 and APCS score has good diagnostic value so that it can be used as a marker of malignancy in colorectal cancer.*

Keywords: *CEA, CA 125, APCS, colorectal cancer*