Abstracts

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Basic Gastroenterology

IDDF2018-ABS-0123 NOVEL MODALITY OF NON-INVASIVE COLORECTAL CANCER SCREENING: COMBINATION OF FAECAL CYCLOOXYGENASE 2 (COX-2) MRNA, CARCINOEMBRYONIC ANTIGEN (CEA), AND FAECAL IMMUNOCHEMICAL TEST (FIT)

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Background Colorectal is the third most commonly occurring cancer in men and the second most commonly occurring cancer in women. Screening modalities and guidelines directed at prevention and early detection have progressed and resulted in a significant decrease in the prevalence and mortality of colorectal cancer via direct visualisation or using specific markers. Noninvasive screening modalities are continuously being studied. Identification of specific genetic alterations and biomarkers in the adenoma-cancer sequence allow for the study and development of noninvasive screening modalities beyond guaiac-based faecal occult blood testing. The purpose of this study is to highlight some of the new candidate predictive and prognostic colorectal cancer molecular markers for stool samples.

Methods A cross-sectional study was conducted at Ciptomangunkusumo Hospital patients underwent colonoscopy and biopsy for advanced precancerous lesion and colorectal cancer; stool samples were also obtained from the patients. We compared noninvasive test from stool sample using faecal immunochromatographic test (FIT), KRAS, Carcinoembryonic Antigen (CEA), Cyclooxygenase 2 (COX-2) mRNA, M2-Pyruvate Kinase (M2-PK), calprotectin and its combination in average risk for colorectal cancer.

Results 97 patients with mean age 56 years old (deviation standard ±11.9). The proportion of female 47.4% (n=46), and male 52.6% (n=51). The proportion of colorectal cancer patients were 15.5%, advanced precancerous lesions were 24.7%. Combination of faecal COX2-CEA-FIT yields the highest sensitivity score. The sensitivity for detecting colorectal cancer was 93.3% with combination of faecal COX2-CEA-FIT. The sensitivity for detecting advanced precancerous lesions was 75% with combination of faecal COX2-CEA-FIT. Specificities with combination of COX2-CEA-FIT for detecting colorectal cancer was 61.3%. Specificities with combination of COX2-CEA-FIT for detecting advanced precancerous lesions was 62%, AUC score for discriminating colorectal cancer was 77.3% (CI 66.4%–88.2%), while AUC score for discriminating advanced precancerous lesions was 68.5% (CI 56.4%–80.6%). PPV 31.1%, NPV 98% LR+2.41, LR- 0.11 for discriminating colorectal cancer; while PPV 40%, NPV 88%, LR+1.97, LR-0.4 for discriminating advanced precancerous lesions.

Conclusions Faecal COX2-CEA-FIT yields a high sensitivity rate for screening colorectal cancer.