

Colorectal cancer among young native Indonesians: A clinicopathological and molecular assessment on microsatellite instability

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Abstrak

Tujuan: Untuk mengevaluasi karakter klinikopatologis kanker kolorektal pada pasien muda Indonesia dan menilai kaitannya dengan ekspresi protein MLH1, MSH2, dan SMAD4, dan membandingkannya dengan pasien kanker kolorektal usia di atas 60 tahun.

Metode: Data rekam medis pasien kanker kolorektal usia di bawah 40 tahun dan usia di atas 60 tahun, dikumpulkan dari 3 rumah sakit: Jakarta, Makasar, dan Bandung. Kelompok etnis dipilih dari suku bangsa Jawa, Makasar (Sulawesi Selatan), dan Minangkabau (Sumatera Barat) yang dikonfirmasi berdasarkan kuesioner. Pada spesimen tumor dilakukan pemeriksaan histopatologi, gradasi tumor, serta pemeriksaan imunohistokimia untuk penentuan ekspresi protein MLH1 dan MSH2 untuk menilai mutasi instabilitas mikrosatelit. Ekspresi protein SMAD4 diperiksa untuk memastikan bahwa jaringan tumor tidak berasal dari instabilitas mikrosatelit.

Hasil: Telah dikumpulkan 121 penderita kanker kolorektal dari etnis Sunda, Jawa, Makasar, dan Minangkabau. Derajat keganasan antara pasien muda dan pasien tua berbeda secara bermakna ($p = 0.001$). Pewarnaan imunohistokimia untuk protein MSH2 dan MLH1 yang dilakukan pada masing-masing 92 dan 97 pasien, menunjukkan tidak terdapat perbedaan bermakna dalam hal ekspresi MLH1 dan MSH2 dan gradasi tumor; yang berarti tidak ada hubungan antara instabilitas mikrosatelit dan derajat tumor.

Kesimpulan: Karakter kliniko patologi kanker kolorektal pada penduduk asli Indonesia, tidak berbeda antara pasien usia muda (< 40 tahun) dan pasien usia tua (>60 tahun) pada kelompok etnis yang sama. Juga tidak terdapat perbedaan dalam ekspresi protein MSH2 dan MLH1, yang merupakan indikator instabilitas mikrosatelit. (*Med J Indones 2010; 19:245-51*)

Abstract

Aim: To obtain clinicopathological characteristics of colorectal cancer among young native Indonesians and to assess MLH1, MSH2, and SMAD4 protein expressions, comparing them with a matched population of colorectal cancer patients aged 60 years old and older.

Methods: Medical records of colorectal cancer patients aged 40 years or younger and 60 years or older from several hospitals in three Indonesian cities – Jakarta, Makassar, and Bandung - were reviewed. The “native” ethnic groups were selected from those originating from Java, Makassar (South Celebes), Minangkabau (West Sumatra). Ethnicity of 121 colorectal carcinoma patients was confirmed by fulfilling requirements in a questionnaire. Tumor specimens of those patients underwent evaluation for histopathology, tumor grading as well as immunohistochemical analysis to assess MLH1, MSH2 protein expressions to detect microsatellite instability mutation pathway and SMAD4 protein expression to reconfirm that the specimens were not microsatellite instability origin.

Results: There were 121 colorectal carcinoma cases of Sundanese, Javanese, Macassarese and Minangkabau ethnic group. This study indicated that colorectal cancer has statistically different grade ($p = 0.001$) between the young and the older patients. Immunohistochemical staining for MSH2 protein and MLH1 were done for 92 and 97 specimens respectively. There was no significant difference between the expressions of MLH1 and MSH2 on tumor grading, indicated there was no correlation between microsatellite instability and tumor grading in this study.

Conclusion: Colorectal cancer in young native Indonesian patients (40 years old or less) was not different in clinicopathological characteristics compared to older patients (60 years old or more) in similar ethnic groups. There was also no difference in MSH2 and MLH1 protein expressions, important indicators of microsatellite instability and . (*Med J Indones 2010; 19:245-51*)

Key words: colorectal cancer, microsatellite instability, MLH1, MSH2, native Indonesian, SMAD4