

Prediction of hereditary nonpolyposis colorectal cancer using mRNA MSH2 quantitative and the correlation with non-modifiable factor

Tjahjadi-Robert Tedjasaputra^{1*}, Mochammad Hatta², Muh Nasrum Massi², Rosdiana Natzir², Agussalim Bukhari², Rina Masadah², Muh Luffi Parewangi², Prihantono², Rinda Nariswati³, Shirly Elisa Tedjasaputra¹ and Vincent Tedjasaputra⁴

¹Hasanuddin University, Indonesia

²University of Hasanuddin, Indonesia

³Bina Nusantara University Jakarta, Indonesia

⁴American Association for the Advancement of Science (AAAS), USA

Background: Hereditary Non-Polyposis Colon Cancer (HNPCC) is a dominantly inherited syndrome of high risk of Colo-Rectal Cancer (CRC) at a young age. Previous study has focused on DNA sequence polymorphism and Amsterdam and Bethesda criteria as the disease susceptibility. However, detecting mRNA quantitatively is easier to predict of HNPCC in CRC patient.

The aim of this study was to determine a cut-off point for RNA quantitative MSH2 gene expression for hereditary parameters and the correlation with non-modifiable risk factors of age, gender, tumor location, staging, family history and histopathology.

Methods: We performed a cross-sectional translational sequential study; (1) MSH2 mRNA quantitative RT-PCR gene expressions in tissue and whole blood CRC patients, (2) gene expression in normal matched controls, (3) bivariant and multiple analysis between hereditary CRC and non-modifiable risk factor based on MSH2.

Results: 40 CRC and 31 control subjects were enrolled. The mean blood MSH2 level of control group was 12,219 ± 756-fold changes (fc). The cut-off point for Hereditary MSH2 was 11,059 fc. The mean MSH2 blood level CRC subjects was 11,411 ± 2,912 fc and MSH2 tissue level was 7,485.00 (4,174.00-14,218.00) fc. Thirty two percent (32.5%) of CRC subjects had hereditary CRC based on their MSH2 blood level. Bivariant and multiple analysis showed significant correlation between MSH2 mRNA gene expression with Age, Staging and Family history.

Conclusions: The cut-off Point of hereditary mRNA quantitative expression could be used for screening for hereditary CRC of HNPCC. There was significant correlation of mRNA MSH2 level with Age, Staging and Family history.

Keywords: Colorectal cancer, MSH2 gene, Nonmodifiable factor.

8th Annual Conference and Expo on Biomaterials

May 10-11, 2023

Zurich, Switzerland

Biography

Tjahjadi Robert Tedjasaputra SpPD, KGEH, FINASIM is graduated from Medical Faculty University of Padjadjaran, Indonesia. He is a GI Consultant: Medical Faculty, University of Indonesia. He is doing PhD program at Medical Faculty, University of Hasanuddin. His Resent Job: Gastroenterologist Consultant, Interna Medicine Tarakan General Hospital and Siloam Hospital Lipovilage Hospital. He is a Lecturer of Medical Faculty of Indonesia, Medical Faculty of Admajaya and Medical Faculty of UKRIDA. His research interests are Colon Cancer, IBD and ERCP.

Received: April 27, 2023; **Accepted:** April 28, 2023; **Published:** May 10, 2023
