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Human Bocavirus (HBoV) and Colorectal Cancer Outcome: A Molecular-based Study

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Background: Colorectal cancer (CRC) as a worldwide human health concern is identified being a multifactorial subject that infection with specific viral particles such as oncogenic viruses is research interest. Human bocavirus (HBoV) as a recent isolated virus has been investigated in many respiratory and enteric diseases but rare studies evaluates it in tissue specimens especially in cancerous sections. The aim of this study was to detect the presence of HBoV genome and its genotyping in CRC patient's tissue and compare the result with matched healthy control group tissue.

Method: in this retrospective case-control study, CRC cases were sporadic and non-familial cancerous while control subjects had healthy or non-malignant lesions in colon tissue. A conventional-PCR performed by specific primers for HBoV VP1 gene. After sequencing of positive PCR products, raw data used for trimming and alignment by bioinformatics software CLC Main Workbench 5 and MEGA5. SPSS v.22 used for statistical calculations.

Result: a total of 157 subjects were participated that 66 were diagnosed as CRC cases and 91 were non-CRC colon tissue as control group that matched by the cases. The mean age (y) \pm standard deviation of each case and control groups were 59.35 ± 14.48 and 57.21 ± 14.66 , respectively. PCR results showed there were 1.3% (2/157) HBoV positive (of each groups one was positive). Sequencing analysis showed all were HBoV-1 genotype.

Conclusion: our study showed there are low rate of HBoV genome in Iranian CRC and non-CRC colon tissue. Furthermore, the predominant genotype in our studied subsets were HBoV-1 according to phylogenetic analysis.

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