



Title: Predominance of *Blastocystis hominis* Subtype I among Colorectal Cancer Patients in Makkah, Saudi Arabia

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The putative role of infectious agents in causing gastrointestinal disorders is undeniable. In this regard, *Blastocystis hominis* has increasingly been implicated for diarrheal illness in immunocompromised individuals including colo-rectal cancer (CRC). *Blastocystis* is a genetically diverse intestinal parasite with controversial pathogenic potential. It has been shown recently that the antigen of certain *Blastocystis* subtypes could facilitate the proliferation of colon cancer cells. The aim of the current study was to assess the prevalence of *Blastocystis* in CRC patients and to genetically identify *Blastocystis* subtypes commonly associating CRC in Makkah region, Saudi Arabia. A total of 218 stool samples were collected from suspected patients including 74 CRC, 64 Cancer other than colon (COC) and 80 non-cancer (NC) patients. Collected stool samples were initially examined for detection of *Blastocystis* infection using culture technique. *Blastocystis*-positive isolates were further genetically subtyped using multiplex polymerase chain reaction with sequence-tagged site primers (PCR-STs). Out of the total examined stool specimens, *Blastocystis* were conventionally identified in 22.9% (50 out of 218). This included 29.7%, 25% and 15% among CRC, COC and NC patients, respectively. Using PCR-STs, obtained *Blastocystis* isolates were genetically categorized into 3 different subtypes; subtype I (38%), subtype II (44%) and subtype V (22%). While subtype II was predominantly detected in both COC and NC patients (43.7% and 58.3%, respectively), interestingly, subtype I was most predominant in CRC patients (54.5%). To the best of our knowledge, the study is the first to genetically determine the *Blastocystis hominis* subtypes associating CRC in Makkah region, Saudi Arabia.

Key words: *Blastocystis hominis*; Colorectal Cancer; Genetic diversity; PCR-STs.

Biography

Dr. Mona Abd EL-fattah Ahmed has completed her M.D. at the age of 33 years from Ain Shams University. She is **Associate Consultant and head of Clinical Parasitology Section**, and **Laboratory Training and Education Coordinator** at the Laboratory Department, King Abdullah Medical City, Makkah, KSA, since June 2010 till present. She is also **Professor of Medical**

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