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# Genetic, Environmental, and Dietary Risk Factors of Colorectal Cancer: A Case–Control Study in the Algerian East



Samira Negrichi and Salima Taleb

**Abstract** Colorectal cancer (CRC) is the second most common cancer diagnosed in Algeria. Incidence and mortality rate of CRC has increased to rank Algeria in third place on the African scale. Environmental and genetic factors have an important role in CRC pathogenesis; for this reason, this study aimed to clarify the role of some risk factors (RF) of CRC in the east of Algeria region. We performed a case–control study in five Medical Oncology Services in the Algerian East: Tebessa, Batna, Annaba, Setif, and Constantine, between 2016 and 2019. A total of 200 patients diagnosed with CRC and 200 age-matched controls were included in this study. They were interviewed about environmental, dietary, and genetic RF (family history of cancer) using a questionnaire. Results showed a significant link between high educational level and an increased risk of CRC (OR = 0.39; CI: 0.24–0.64;  $p < 0.001$ ). Cancer and CRC in 1st degree (mother, father, brother, sister, or child) relatives were significantly associated with CRC risk (OR = 2.23; CI: 1.35–3.69;  $p = 0.002$  and OR = 4.94; CI: 1.39–17.47;  $p = 0.013$ , respectively). Occupational exposures showed a significant connection to an increased risk of CRC (OR = 3.37; CI: 1.73–6.55;  $p < 0.001$ ); also obesity and alcohol consumption were significantly associated ( $p = 0.038$ ;  $p < 0.001$ , respectively). Yogurt (OR = 0.63; CI: 0.41–0.96) and cereals (OR = 0.34; CI: 0.22–0.51) consumption were significant protective factors, while red meat and fizzy drink were associated with an increased risk; OR of 1.67 (CI: 1.11–2.51) and 2.66 (CI: 1.78–3.99), respectively. This study suggests enhancing the awareness about CRC, adopting healthy dietary choices, and avoiding exposure to risk factors.

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S. Negrichi (✉)

Department of Living Beings Biology, Faculty of Exact Sciences and Sciences of Nature and Life, Larbi Tebessi University: Tebessa- ALGERIA, Larbi Tebessi University, Tebessa, Algeria  
e-mail: [samiranegrichi@live.fr](mailto:samiranegrichi@live.fr)

S. Taleb

Department of Applied Biology, Faculty of Exact Sciences and Sciences of Nature and Life, Larbi Tebessi University: Tebessa- ALGERIA, Larbi Tebessi University, Tebessa, Algeria

Laboratory of Nutrition and Food Technology (LNTA), University of Constantine 1, Constantine, Algeria