

Clinicopathological characterization of Colorectal Cancer at a Tertiary Laboratory in Pretoria.

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Background and Objectives: Colorectal cancer is traditionally predominant in the elderly population above 50 years, defined as late onset CRC (LO-CRC). However, recent epidemiological data highlight a rising incidence of CRC worldwide in individuals below 50 years [early-onset CRC (EO-CRC)], representing a significant public health concern. Current screening strategies are inadequate to address the risks of EO-CRC. This study will help interpret the clinical and molecular profile of CRC by distinguishing trends in demographics, clinical and histopathological characteristics of EO-CRC and LO-CRC cohorts, crucial for the oncologic management of these patients.

Methods: A descriptive, cross-sectional study was conducted using archival cases to investigate the molecular characteristics of CRC from 01 January 2014 to 31 December 2024. The data was extracted from electronic medical records, requested from Academic Affairs and Research Management and retrieved from Corporate Data Warehouse database. The data included demographic, clinical and histopathological findings compiled in a structured Microsoft Excel spreadsheet and analysed using STATA (version 18.0).

Results: A total of 752 cases met the inclusion criteria, 223 were EO-CRC and 513 were LO-CRC. The mean age for all CRC cases was 57.4 ± 13.98 years (range 21-96) with males comprising 54% of cases. In EO-CRC, male predominance was exhibited across all age groups except the 30-39-years (females: n = 42; males: n = 41). In contrast, females exhibited the highest proportion of LO-CRC cases, except within the 60–69-year cohort (males: n = 127; females: n = 96). Left sided tumours were most common in both EO-CRC (n=148) and LO-CRC (n=335). Compared to LO-CRC (n=58), EO-CRC (n=130) showed a high frequency of mucinous adenocarcinoma.

Conclusion: This study exhibits distinct demographic and histopathological patterns between EO-CRC and LO-CRC. EO-CRC was associated with poor histopathological patterns highlighting the need for tailored management approaches for these young patients.