ORIGINAL ARTICLE

Time to Management of Colorectal Cancer: Audit of the Gastroenterology Department at Mongi Slim Hospital

Délai de prise en charge du cancer colorectal: Audit du service de gastro-entérologie de l'hôpital Mongi Slim

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Abstract

Introduction: Colorectal cancer (CRC) is a major public health issue in Tunisia. This study aimed to evaluate the time to management of CRC at Mongi Slim Hospital and identify factors associated with a longer delay.

Methods: Retrospective study including adult patients with histologically confirmed CRC treated with curative intent between April 2013 and December 2019.

Results: Fifty-four patients were included (mean age 63 years, male-to-female ratio 1.16). The mean diagnosis-to-treatment interval was 44 days (median 33). Delay (>30 days) occurred in 57% of patients. Predictors of delay were staging in the public sector and outpatient management. Outpatient management refers to patients followed via ambulatory medical consultations where the diagnostic workup (notably CT scans and biopsies) was performed externally.

Conclusion: More than half of the patients experienced delayed management. Structural and organizational measures are required to improve timelines and CRC prognosis.

Keywords: Colorectal cancer – Time to treatment – Audit – Tunisia – Epidemiology

Résumé

Introduction: Le cancer colorectal (CCR) constitue un problème majeur de santé publique en Tunisie.
L'objectif de cette étude était d'évaluer les délais de prise en charge du CCR au sein du service de gastro-entérologie de l'hôpital Mongi Slim et d'identifier les facteurs associés à un retard.

Méthodes: Étude rétrospective incluant les patients adultes avec CCR confirmé histologiquement, pris en charge à visée curative entre avril 2013 et décembre 2019.

Résultats: Cinquante-quatre patients ont été inclus (âge moyen 63 ans, sex-ratio H/F = 1,16). Le délai moyen diagnostic–traitement était de 44 jours (médiane 33). Un retard (>30 jours) était observé chez 57 % des patients. Les facteurs prédictifs de retard étaient un bilan d'extension dans le secteur public et une prise en charge ambulatoire. La prise en charge ambulatoire concerne les patients suivis en consultation externe dont le bilan diagnostic (notamment scanner et biopsies) a été réalisé en externe.

Conclusion: Plus de la moitié des patients présentaient un retard de prise en charge. Des mesures structurelles et organisationnelles sont nécessaires pour améliorer les délais et le pronostic du CCR.

Mots-clés: Cancer colorectal – Délai de traitement – Audit – Tunisie – Épidémiologie

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Introduction

Colorectal cancer (CRC) is a major public health concern, with approximately 1.8 million new cases worldwide in 2018 (1). In Tunisia, CRC represents nearly 10% of all cancers and its incidence continues to rise (2). Beyond early detection, timely management after diagnosis is essential to improving survival. Several studies have demonstrated that prolonged delays in initiating treatment are associated with disease progression and poorer outcomes (3,4). Current recommendations suggest maintaining a diagnosis-to-treatment interval of less than 30 days (5). However, few Tunisian studies have evaluated the duration and determinants of these delays (6,7).

This study aimed to analyze pre-therapeutic delays in CRC management in our center and to identify predictive factors for delayed treatment.

Methods

This was a retrospective, descriptive, and analytical study conducted in the Department of Gastroenterology at Mongi Slim Hospital (Tunis), from April 2013 to December 2019. The study included patients aged 18 years or older with a diagnosis of colorectal adenocarcinoma confirmed by colonoscopy and histopathological examination, and whose management was undertaken with curative intent. Patients who underwent emergency surgery, had metastatic or palliative-stage disease, or were lost to follow-up before treatment were excluded.

Data were collected from medical records, hospitalization registries, endoscopy reports, and pathology files. The following intervals were analyzed: symptom onset–first consultation, consultation–diagnostic confirmation, and diagnostic confirmation–treatment initiation. Clinical, biological, radiological, and therapeutic characteristics were recorded. The term "outpatient management" refers to patients followed via ambulatory medical consultations where the diagnostic workup, including imaging and biopsies, was performed externally.

Statistical analysis was performed using SPSS 20.0. Quantitative variables were described by means and medians; qualitative variables by frequencies. Group comparisons used Student's t-test or Mann-Whitney U test for continuous variables and Chi-square or Fisher's exact test for categorical variables. A multivariate logistic regression was performed to identify independent predictors of delay, defined as diagnostic-to-treatment interval >30 days. Statistical significance was set at $p < 0.05$.

Ethical approval was obtained from the Ethics Committee of Mongi Slim Hospital. Data confidentiality and anonymity were strictly maintained.

Results

Fifty-four patients were included. Patient demographics and comorbidities are summarized in Table 1.

Table 1. Patient Characteristics

Variable	Value
Mean age	63 years (26–90)
Sex ratio (M/F)	1.16
Low socioeconomic status	48%
Urban residence	89%
Comorbidities	57.4%
Hypertension	49%
Diabetes	26%

Clinical presentations were dominated by transit disorders and abdominal pain as shown in Table 2. Impaired general condition was noted in 43%, and anemia in 29.6%. The mean symptom-to-consultation delay was 98 days (median 62) (table 2).

Table 2. Symptoms and Initial Delays

Variable	Value
Bowel habit disturbances	72%
Abdominal pain	68.5%
Rectal bleeding	56%
General condition impairment	43%
Anemia	29.6%

Endoscopically, an ulcerated and vegetative appearance was predominant (96.2%). The tumor was colonic in 57% of cases and rectal in 43%. Successive delays from the first consultation to the final histological diagnosis are summarized in Figure A. All tumors were adenocarcinomas, 68.5% of which were well-differentiated.

Staging was performed using thoraco-abdomino-pelvic CT in 100% of patients (75% in the public sector). Pelvic MRI was performed in 31.5%. The diagnostic-to-staging delay was 16 days (median 14). Tumor staging showed a predominance of T3N0M0 (68.5%).

The diagnostic-to-MDT (multidisciplinary team meeting) delay was 22 days (median 18). The therapeutic strategy chosen was upfront surgery in 64.8% of cases and chemoradiotherapy in 35.2%.

The diagnostic-to-treatment delay was 44 days on average (median 33; range 11–173). A delay (>30 days) was observed in 57% of patients Figure A. In univariate analysis, low socioeconomic status (p=0.033), staging performed in the public sector (p=0.036), and outpatient management (p=0.031) were associated with a longer delay. In multivariate analysis, two independent factors were identified: staging performed in the public sector (p=0.02; OR=42) and outpatient management (p=0.02; OR=35) (table 3-4).

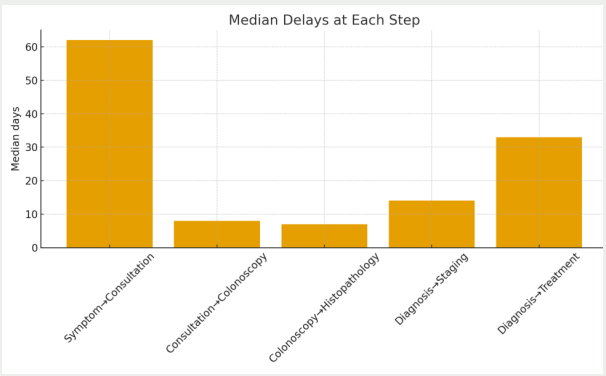


Figure A. Median Delays at Each Step

Table 3. Univariate Analysis of Factors Linked to Delays >30 Days

Factor	p-value
Low socioeconomic status	0.033
Public sector staging	0.036
Outpatient management	0.031

Table 4. Multivariate Analysis of Factors Linked to Delays >30 Days

Factor	p-value	Odds Ratio
Public sector staging	0.02	42
Outpatient management	0.02	35

Discussion

Our study demonstrated that delays in CRC management in our center are substantial, with an average diagnosis-to-treatment interval of 44 days and more than half of patients exceeding the recommended 30-day threshold (5). Our findings indicate that outpatient management—where biopsies and staging imaging are performed externally—is a significant factor in care delays. This suggests that ambulatory pathways may require better coordination compared to inpatient circuits.These findings are consistent with prior Tunisian observations suggesting persistent systemic barriers to timely cancer care (6,7).

The symptom onset–consultation interval was 98 days, reflecting limited awareness of alarm symptoms and socioeconomic constraints, as previously described (12,13). The consultation-to-diagnosis delay was influenced by limited endoscopic availability and high patient volume in the public sector. Similarly, the diagnostic-to-treatment delay was significantly prolonged when staging examinations were performed in the public system, where appointment access is slower.

International comparisons highlight structural differences in health system organization. Denmark, after implementing national fast-track colorectal pathways, reports median diagnosis-to-treatment delays of 9–15 days (7), while France reports approximately 20 days (8) and Germany 19 days (9). Conversely, longer delays similar to ours have been observed in Jordan (45 days) (10) and Morocco (134 days) (11).

Evidence demonstrates that prolonged delays worsen prognosis, increasing CRC-specific mortality and reducing 5-year survival (4,5). In our study, two independent predictors of delayed treatment were identified: staging performed within the public sector and outpatient care pathways. These reflect organizational constraints rather than clinical severity.

To improve these outcomes, scaling up structured fast-track diagnostic pathways, enhancing coordination between specialties, and fostering public-private partnerships for imaging access are feasible and aligned with national oncology priorities (7,14).

Proposed Recommendations to Improve the Timeliness of Diagnosis and Management of Colorectal Cancer in Tunisia

To improve the timeliness of colorectal cancer diagnosis and management in Tunisia, nationwide awareness campaigns should educate patients and primary care physicians about warning signs. Patients with suspected disease must be informed of the importance of follow-up. A structured checklist with deadlines for each diagnostic and follow-up step should be implemented, considering socio-economic constraints. Collaboration with radiology services should prioritize CT and MRI for colorectal cancer patients, while staff are sensitized to shorten appointment delays. Public-private partnerships can reduce staging costs and delays, and frequent oncology consultations can minimize repeated hospitalizations and optimize care. Finally, legislation establishing maximum timeframes for cancer management, similar to Denmark's 2001 model, accompanied by detailed diagnostic strategies, should be considered.

Limitations of our work

- Monocentric study with a small number of participants.

Conclusion

CRC management delays in our center exceed recommended standards, primarily due to socioeconomic and organizational constraints (5–7). Strengthening public awareness, implementing fast-track diagnostic and treatment circuits, improving coordination between care levels, and developing public-private partnerships are crucial to reducing delays and improving patient survival (7,14).

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