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EVALUATION OF ELDERLY PATIENTS WITH COLORECTAL PATHOLOGY

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Absract. *To evaluate how older age and comorbidities affect outcomes in patients undergoing surgery for colorectal pathology (hemorrhoids , anal fissure, fistula), especially considering the impact of age, gender, and comorbidities on length of hospital stay, readmission rates, reoperation rates, and overall health and survival. The study aimed to identify risk factors for adverse outcomes in elderly patients with colorectal pathology and to provide information on appropriate perioperative management strategies to improve postoperative outcomes in this population. Methods: Therefore, this study aimed to evaluate how older age and comorbidities affect outcomes in patients undergoing surgery for colorectal pathology (KRP) at the Samarkand State Medical University, multidisciplinary clinic-1. This retrospective cohort study included patients aged 40 years and older who underwent elective or emergency surgery in the colorectal region between January 2022 and December 2023. The study analyzed independent variables such as age, gender, and comorbidities, as well as variables related to the surgical procedure such as stoma creation, hospitalization history, surgical approach, American Society of Anesthesiologists (ASA) score, and Charlson Comorbidity Index score . A total of 96 patients with CR P underwent surgical resection. Patient age had a significant effect on both pre- and post-resection length of stay (LOS) and overall survival (OS), but not on 30-day readmission and reoperation rates. Multivariate analysis showed that age was a risk factor for longer preoperative and postoperative LOS and 30-day and 365-day mortality, but was not associated with an increased risk of 30-day reoperation and readmission. Results: The study also found that chronic heart failure increased the risk of 30-day mortality by fourfold, preoperative survival by 51% and postoperative survival by 33%, while chronic kidney failure was associated with a 74% increase in 30-day readmissions. Conclusion: These findings suggest that advanced age and comorbidities require careful preoperative assessment and appropriate perioperative management to improve surgical outcomes in elderly patients undergoing elective or emergency resection of colorectal cancer. These findings have important implications for clinicians and health care providers managing elderly patients with CRC .*

Keywords: *concomitant diseases, colorectal surgery, surgical resection , anesthesia*

Introduction. Colorectal pathologies are a major public health problem worldwide, and the incidence is expected to increase due to the aging population and increasing life expectancy [1,3,5]. Despite the decreasing mortality rates associated with colorectal pathologies , patients in older age groups show an uneven mortality pattern, which can be potentially influenced by factors such as comorbidities, physiological reserves, social/cognitive status, and cancer stage at diagnosis [2,4]. By 2030, the majority of patients with colorectal pathologies will be over 65 years old, and older patients tend to have worse surgical outcomes than their younger counterparts. Thus, an individualized comprehensive preoperative assessment taking into account all comorbidities and a multidisciplinary

approach are necessary to ensure appropriate care of older patients with colorectal pathologies [5,6]. This study aims to evaluate the impact of age and multimorbidity on peri- and postoperative outcomes in patients undergoing surgical resection for colorectal pathologies , with the ultimate goal of improving patient care and surgical outcomes. By understanding the epidemiology of multimorbidity , more effective healthcare models can be developed to treat patients with multiple diseases based on benefit/risk assessment [7-10].

Objective : The study aimed to identify risk factors for adverse outcomes in elderly patients with colorectal pathologies and to provide information on appropriate perioperative management strategies to improve surgical outcomes in this population.

Methods and materials . This study was conducted at the Samarkand State Medical University, multidisciplinary clinic-1, with a number of patients 96 people and providing universal health care. The primary source of information was the Regional Hospital Discharge Data Set, which included patient demographics, admission and discharge dates, diagnosis codes, surgical procedure codes, American Society of Anesthesiologists scores, Barthel Index for Activities of Daily Living, and death certificate information. The study also used the Jones system Hopkins ACG®, a population health management tool that transforms patient data into actionable information. The study included patients aged 40 years or older who were admitted to Hospital-1 of SamMU with a diagnosis of primary colorectal cancer and underwent emergency or elective surgery between January 202 2 and December 202 3. Exclusion criteria included anal cancer, previous surgical resection before January 1, 202 2 , and ostomy before admission. The study used ICD- 10 -CM codes to classify diseases and surgical procedures, and record linkage was performed with anonymized records to protect patient privacy.

Study results . The primary outcomes of the study were preoperative and postoperative length of stay (LOS), 30-day readmission rate, 30-day reoperation rate, and overall survival (OS). Preoperative LOS was defined as the time between hospitalization and surgery, and postoperative LOS was the time between surgery and discharge. Any unplanned hospitalization within 30 days of discharge was considered a 30-day readmission, and any unplanned procedure within 30 days of surgery was considered a 30-day reoperation. OS was defined as death from any cause within 365 days of surgery. Pre- and post-hospitalization periods were defined as ≤4 and ≤8 days, respectively (see Table 1 for details).

Table 1

Performance indicators by age group

	General (%)	Age category				P- value
		40–64 years (%)		65–74 years (%)	75–84 years (%)	85+ years (%)
Preoperative PN ≥ 4 days*	15.9	9.4	12.3	19.6	30.9	< 0.001
Postoperative LOS ≥ 8 days*	49.5	37.6	47.5	55.7	65.9	< 0.001
30 day reoperation	7.1	7.2	6.6	6.8	5.4	0.681
30-day readmission	5.5	4.6	5.9	5.9	5.6	0.045
365-day mortality	11.7	5.1	8.5	15.0	27.1	< 0.001

These outcomes are often used as indicators to assess the quality of perioperative care because they can be easily obtained from administrative databases.

In this analysis, patients' age at surgery was recorded and divided into four age categories (40–64, 65–74, 75–84, and 85+ years). To assess and predict the relevant outcomes, we also considered several additional variables, including the approach used for surgery (open or laparoscopic), gender (male or female), Barthel index code (0–50 indicates dependence, 55–100

indicates independence), surgical complexity, and comorbidity indices. Surgical complexity was assessed based on non-colorectal surgical procedure-related hospitalizations in the year preceding the index hospitalization, non-colorectal abdominal surgery hospitalizations in the three years preceding the index hospitalization, and ostomy creation during the index hospitalization. Comorbidities were assessed using two indices: the Charlson Comorbidity Index calculated for the three years preceding hospitalization and several ACG indices used to quantify morbidity over time (i.e., the number of comorbidities) and identify primary chronic conditions affecting each patient (including hypertension, lipid disorders, diabetes, osteoporosis, asthma, depression, glaucoma, congestive heart failure, hypothyroidism, chronic renal failure, chronic obstructive pulmonary disease, dementia, Parkinson's disease, degenerative maculopathy , and rheumatoid arthritis). The number of comorbidities was calculated based on the expanded diagnostic clusters (EDCs) assigned to the patient by the ACG system, which are diagnostic groups that describe a pathology or related pathologies based on the organ or apparatus affected.

A significance level of P< 0.05 was used to determine statistical significance. Statistical analysis was performed using Stata software (Stata Corporation, Stata Statistical Software: Release 13.0, College Station, TX) [11].

Results and discussion : During the study, a total of 96 people aged 40 years and older, living in Samara State Medical University , underwent planned or emergency primary surgery for colorectal pathologies . The patient characteristics are shown in Table 1. Our analysis showed that elective surgeries were performed in 87.6% and 59.3% of patients in the 40–64 years and 85+ years age groups, respectively, which was statistically significant (P < 0.01).

Table 2

Main characteristics of the studied patients by age groups

	Total 96 n	Age category			
		40–64 years (%)	65-74 years (%)	75–84 years (%)	85+ years (%)
Floor					
Male	60	(55.4)	(61.3)	(55.8)	(41.8)
Female	36	(40.6)	(38.7)	(44.2)	(58.2)
Method of operation					
Emergency / Urgent	52	(12.4)	(14.4)	(23.3)	(40.7)
Optional	44	(87.6)	(85.6)	(76.7)	(59.3)

The study found that 22.7% of patients aged 40–64 years had three or more comorbidities, while 67.5% of patients aged 85 years and older had the same. The Barthel Index on admission showed that younger patients were more independent in performing ADLs, with higher (worse) values associated with increasing age. The laparoscopic approach was more commonly used in younger patients: 55.3% of patients aged 40–64 years underwent surgery compared with 24.4% of patients aged 85 years and older. Most patients were discharged directly home, but there was an age correlation with the highest proportion of patients discharged outside the home in the oldest age groups (10.6% in the 85+ group compared with 0.9% in the 40–64 class).

Discussion . Several studies have shown that older age and pre-existing cardiac problems increase the risk of postoperative complications in elderly patients with colorectal pathology [1-5]. However, our study showed that age did not influence 30-day reoperation and 30-day postoperative readmission in our cohort. Instead, we found a significant association between comorbidities such as diabetes, dementia, hypothyroidism, and CRF and 30-day postoperative readmission. It is important to identify

comorbidities in colorectal patients requiring surgical resection, since surgical and systemic treatment may burden the physiological reserves of elderly patients. In addition, elderly patients with colorectal pathology have lower bleeding- related survival , which may be due to less aggressive treatment. Prehabilitation programs , accelerated protocols or packages may have a positive impact on outcomes in elderly patients undergoing surgical tumor resection. However, our study has limitations such as lack of information on cancer stage, chemotherapy/radiotherapy, severity of comorbidities and risk factor management.

Conclusion . The data analysis confirmed that advanced age has an impact on both short-term and long-term outcomes in elderly patients undergoing surgery for colorectal pathology . To improve prognostic analysis and determine the risk-benefit ratio, it is important to conduct a thorough preoperative assessment of patient comorbidities. This approach will help in choosing the most appropriate therapeutic option for patients with colorectal pathology with multiple diseases. Future studies should consider the patient's disease stage , severity of comorbidities, and other risk factors to gain a more complete understanding of the complexity of the disease.

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