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Incidence of fecal and urinary incontinence in patients with a diagnosis of rectal carcinoma

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Background

- Low anterior resection syndrome (LARS) what is associated with fecal and urinary incontinence, is one of the main complications of the RC therapy.
- The incidence of LARS was estimated to be 40% to 90%, depending on the study methods and settings [1-3].
- The goal of this retrospective cohort study was to analyze the incidence of urinary (UI) and fecal incontinence (FI) within five years of diagnosis in rectal carcinoma patients and within five years of a randomly selected visit date in non-cancer controls followed in general practices in Germany.

Methods

- This study was based on data from the Disease Analyzer database (IQVIA), which compiles drug prescriptions, diagnoses, and basic medical and demographic data obtained directly and in anonymous format from computer systems used in the practices of general practitioners and specialists [4].
- This study included patients with an initial diagnosis of rectal cancer (ICD-10: C19, C20) in 1,203 general practices in Germany between 2010 and 2017 (index date). To be included in the analysis, participants had to be monitored for at least 12 months prior to the index date and at least 6 months after the index date. Patients with cancer (ICD-10: C00-C99) or fecal (ICD-10: R15) or urinary (ICD-10: R32.0, N39.4) incontinence diagnoses prior to the index date were excluded.
- The main outcome of the study was the incidence of fecal and urinary incontinence in patients with and without RC within 5 years after the index date. Covariates were sex, age groups (≤50, 51-60, 61-70, 71-80, >80 years), and defined diagnoses documented within 12 months prior to the index date, including hypertension (ICD 10: I10), diabetes mellitus (ICD 10: E10-E14), hyperlipidemia (ICD 10: E78), obesity (ICD 10: E66), ischemic heart diseases (ICD 10: I20-I25), and heart failure (ICD 10: I50), and COPD (ICD 10: J44).
- The cumulative incidence of urinary and fecal incontinence in the RC and non-cancer groups was calculated for up to 5 years after the index date using Kaplan-Meier curves in patients with RC and without cancer separately. The incidence rates were displayed separately for men, women, and five age groups. As no information on death was available, deceased patients were considered as lost to follow-up in this study. Multivariate Cox regression models were used to investigate the association between RC and urinary and fecal incontinence adjusted for co-diagnoses (hypertension, diabetes mellitus, hyperlipidemia, obesity, ischemic heart diseases, heart failure, COPD). A p-value of < 0.05 was considered statistically significant.

Baseline characteristics of study patients after 1:1 matching

Variable	Proportions in rectal cancer patients (%)	Proportions in non-cancer patients (%)	p-value
N	3,249	3,249	
Age (Mean, SD)	66.5 (14.2)	66.5 (14.2)	1.000
Age ≤50	10.7	10.7	
Age 51-60	19.0	19.0	
Age 61-70	24.4	24.4	1.000
Age 71-80	31.8	31.8	
Age >80	14.8	14.8	
Sex: female	42.7	42.7	1.000
Sex: male	57.3	57.3	
Diagnoses within 12 months prior to the index date (%)			
Hypertension (ICD 10: I10)	61.0	61.1	0.899
Diabetes mellitus (ICD 10: E10-E14)	25.6	24.2	0.187
Hyperlipidemia (ICD 10: E78)	40.9	39.7	0.300
Obesity (ICD 10: E66)	11.4	11.3	0.938
Ischemic heart diseases (ICD 10: I20-I25)	21.9	22.5	0.551
Heart failure (ICD 10: I50)	10.2	10.6	0.665
COPD (ICD 10: J44)	10.5	11.7	0.105

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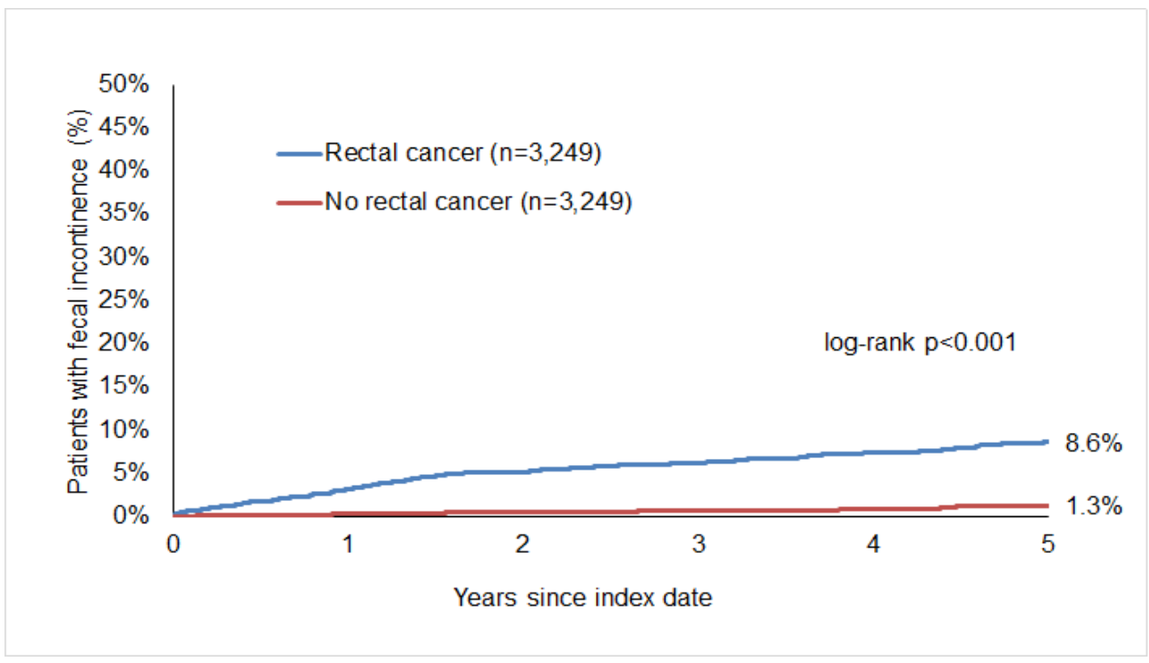
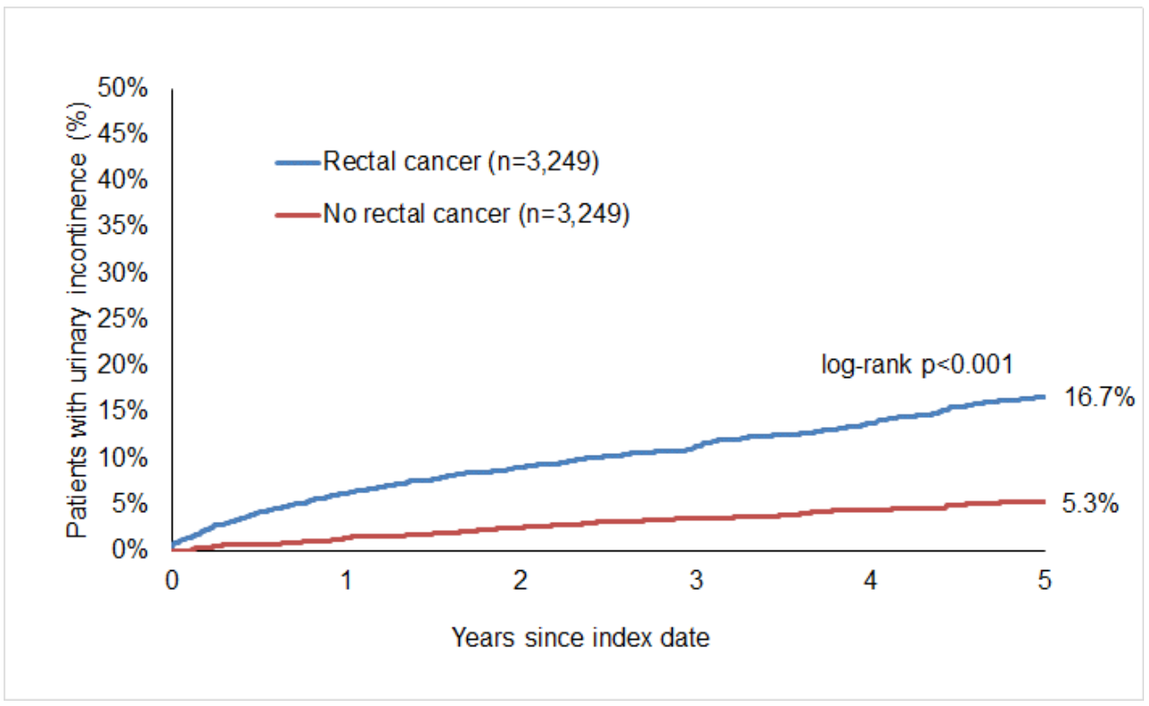
Results

- Within five years of the index date, 8.6% of RC patients and 1.3% (p<0.001) of patients without cancer received a fecal incontinence diagnosis, while 16.7% of RC patients and 5.3% (p<0.001) of patients without cancer received a UI diagnosis.

Kaplan-Meier curves for the time to diagnosis of fecal incontinence in patients with and without rectal cancer



Kaplan-Meier curves for the time to diagnosis of urinary incontinence in patients with and without rectal cancer



- Overall, RC was positively associated with both fecal incontinence [hazard ratio (HR) **8.39**, 95% confidence interval (CI) 5.50-12.81] and urinary incontinence (HR **3.59**, 95% CI 2.91-4.44). These findings were corroborated in the different age subgroups. For fecal incontinence, the effect decreased with age (from HR: 31.54 in patients aged ≤50 to HR 2.18 in patients over 80). This effect was stronger in men (HR: 13.02) than in women (HR: 5.12).

Conclusions

- In accordance with the literature, we confirmed that RC is significantly associated with fecal and urinary incontinence.
- However, it appears that the awareness of this fact needs to be improved among general practitioners since our data show lower percentages of fecal and urinary incontinence diagnoses compared to the percentages for specialized centers reported in the literature.
- Furthermore, surgeons should also pay more attention to urinary incontinence, since it is not included in common LARS scoring systems.

References

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