Monitoring in post-operative Crohn's Disease: describing approaches and the impact of guidelines

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INTRODUCTION

Ileocecal resection (ICR) often leads to remission of Crohn's Disease (CD), but relapse is common.

Guidelines suggest postoperative biologic prophylaxis in high-risk patients and colonoscopy within 6-12 months of surgery to assess for post-operative recurrence (POR).

Use of adjunctive methods of disease monitoring for POR such as serum biomarkers and cross-sectional imaging was not mentioned and is not protocolized.

We aimed to describe the surveillance approach for CD patients after ICR in relation to evidence-based guidelines.

METHOD

- Dual center retrospective study of CD patients who underwent ICR with ≥1 year of follow-up
- Patients grouped into high- (HR) and low-risk (LR) for POR per guidelines:
  - Peri-operative smoking
  - Age <30
  - Penetrating disease
  - 2+ CD related surgeries
- Assessed the use of biomarkers, imaging, and colonoscopy postoperatively
- Compared approaches of postoperative management and recurrence rates in patients who received resection prior to or after 2015, accounting for changing practices with guidelines
- Biomarker, radiographic, and endoscopic POR defined as high CRP/fecal calprotectin (FC), inflammation on CT/MRE, and Rutgeerts ≥i2b, respectively
- P-values were calculated using Wilcoxon test for continuous variables and Chi squared test for categorical ones.

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Table 1. Post operative overview, LR and HR

	Total (n=901)	Low risk (n=197)	High risk (n=704)
CRP		36 (18.3%)	261 (37.7%)
Median time to first CRP (days, IQR)		244.0 (142 - 272)	182.5 (135 - 299)
FC		9 (4.57%)	71 (10.1%)
Median time to first FC, (days, IQR)		267.0 (208 - 415)	241.0 (142 - 464)
Cross-sectional radiography		88 (44.7%)	445 (63.2%)
Median time to first radiography, (days, IQR)		578.5 (263 - 1029)	459.5 (182 - 922)
Ileocolonscopy		147 (74.6%)	578 (82.1%)
Median time to first scope, (days, IQR)		392.0 (222 - 758)	351.5 (222 - 667)
Any monitoring modality within 1 year		113 (58.5%)	499 (71.6%)

Table 2. Pre- vs Post-2015 resection (HR only)

	Total (n=704)	Before 2015 (n=403)	2015 or later (n=301)	p-value
CRP		85 (21.1%)	176 (58.45%)	
Median time to first CRP (days, IQR)		224.0 (145 - 323)	176.5 (128 - 278)	0.053
FC		4 (1.0%)	67 (22.3%)	
Median time to first FC (days, IQR)		415.5 (212 - 668)	228.5 (140 - 416)	0.484
Radiography		192 (47.6%)	138 (45.8%)	
Median time to first imaging (days, IQR)		**584.0 (227 - 1274)**	**398.0 (190 - 570)**	**<0.001**
Ileocolonoscopy		286 (71.0%)	235 (78.1%)	
Median time to first scope (days, IQR)		**421.0 (258 - 916)**	**295.5 (202 - 453)**	**<0.001**
Any modality < 1 year		**230 (61.7%)**	**227 (81.1%)**	**<0.001**
Postoperative biologic use				**<0.001**
<4 weeks		29 (7.2%)	49 (16.3%)	
4-12 weeks		49 (12.2%)	89 (29.6%)	
>12 weeks		181 (44.9%)	101 (33.6%)	
None		144 (35.7%)	62 (20.6%)	
Biomarker Recurrence		**21 (5.2%)**	**72 (24.3%)**	**<0.001**
Radiographic Recurrence		**194 (97.5%)**	**74 (60.7%)**	**<0.001**
Endoscopic Recurrence		**192 (95.5%)**	**88 (51.5%)**	**<0.001**

RESULTS

- 901 CD patients included with 704 (78%) considered HR. Median follow-up time was 55 months.
- For LR patients, median time to first CRP was 244 days, to first calprotectin was 267 days, to first imaging was 579 days, and to first colonoscopy was 392 days.
- For HR patients, median time to first CRP was 183 days, to first calprotectin was 241 days, to first imaging was 460 days, and to first colonoscopy was 352 days.
- 72% of HR patients had at least 1 modality within 1 year compared to 59% of LR.
- Compared to pre-2015, patients who underwent an ICR in 2015 or later had significantly earlier monitoring with imaging (584 days vs. 398 days, p<0.001) and colonoscopy (421 days vs. 295 days, p<0.001). There was no difference in time to first CRP or calprotectin.
- Timing of ICR was significantly associated with postoperative biologic use, and the identification of POR by biomarkers, radiography, and endoscopy (all p<0.001).

CONCLUSIONS

Overall about 30% of HR CD patients in this cohort did not undergo any modality of monitoring within the first year after ICR.

When stratified by year of surgery, those who underwent surgery in or after 2015 were more likely to have earlier disease monitoring with imaging and colonoscopy whereas utilization of biomarkers was not changed.

These data suggest that while guidelines have changed practice, allowing for the earlier identification of POR and initiation of appropriate therapy, many patients remain under-monitored.

As earlier monitoring is likely to improve long-term clinical outcomes, additional studies are required to further guide optimal surveillance intervals and use of biomarkers.