Objectives

To estimate the cumulative incidence of colectomy for ulcerative colitis (UC) patients in the UK, and the risk of perioperative complications and mortality.

Methods

A literature review was conducted in Medline. An overview of the search is presented in Box 1.

Box 1. Summary of Medline search

- Indication: Ulcerative colitis without any restrictions on disease severity
- Surgical interventions
  - Colectomy
  - Proctocolectomy
  - Ileal pouch anal anastomosis (IPAA)
  - Ileoa nal pouch
  - Pouch surgery
  - Ileorectal anastomosis
  - Ileostomy
- Terms to identify both "rate of [surgical intervention term]" and "[surgical intervention term] rate"
- No limits for study design, publication date, or language were applied in the search

Studies were considered for inclusion in the review if they reported on long-term surgical intervention rates for moderately to severely active UC or in moderate and severe UC patient populations separately. We focused on publications that reported on elective surgery instead of emergency interventions arising from acute severe UC or a UC flare. Studies reporting on the rates of surgical intervention in paediatric populations were excluded.

Results

Literature review and study selection

The PRISMA diagram in Figure 1 shows the selection process from the identification of 371 records to the inclusion of five UK-based studies, reporting on patients undergoing elective surgery for the treatment of UC.
Of the five UK-based studies, one was a cost-effectiveness analysis\(^1\) and two were retrospective cohort analyses\(^2,3\) with relatively small samples (N=38 to 143). The remaining two studies were national, population-based analyses reporting on the long-term rates of colectomy for UC patients\(^4,5\).

**Rate of elective surgery**

Misra et al.\(^4\) was a retrospective population-based study using the Hospital Episode Statistics (HES) database. It included records between 1 April 1997 and 31 March 2012; N=73,318. The aim of the study was to compare the difference in colectomy rates for UC, dependent on the ethnic background of the patient.

Chhaya et al.\(^5\) was a large (N = 1766), population-based cohort of incident cases of UC in the United Kingdom between 1989 and 2009 using data from the Clinical Practice Research Datalink (CPRD).

Misra et al.\(^4\) reported that the colectomy rate excluding cases arising from colorectal cancer was 6.9% (n = 5044/73,318) over 15 years. Of the 5044 patients undergoing colectomy, 4037 had elective and 1481 had emergency colectomy.

Chhaya et al.\(^5\) reported a cumulative risk of 2.4%, 5.9%, 8.3% and 11.2% at 1, 5, 10 and 20 years since diagnosis, suggesting a steady increase after the first 5 years since diagnosis (Figure 2).

Neither Misra et al. nor Chhaya et al. reported information on disease severity. Chhaya et al. attempted to adjust for severity by including ‘early steroid use’ in the regression model since this was “an established surrogate marker for a severe disease phenotype.”\(^5\)

We compared the data reported by Misra et al. and Chhaya et al. with similar data used in single technology appraisals conducted by the National Institute for Health and Care Excellence (Table 1).
Perioperative complications and mortality

We did not find any primary evidence on perioperative complications or mortality from the UK sources. We consulted the National Clinical Audit Records for inpatient care for adults with ulcerative colitis. This was a report published from the UK IBD audit reporting on national- and hospital-level findings on the quality of care provided to people admitted to hospital, primarily for the treatment of UC.

In the 2014 publication, perioperative complications were reported for 32% and 35% of patients undergoing elective and non-elective surgery respectively. Wound infection was the most common complication; 8% and 9% respectively for elective and non-elective surgery.

The overall mortality rate was reported to be relatively low compared with previous versions of the audit (Table 2). However, it was unclear what the perioperative mortality risk was. In an economic analysis by Archer et al., the risk of death was based on the 2012 publication of the UK IBD audit: 28 deaths among 807 elective and emergency surgical episodes in adult patients with UC.

We also reviewed the most recent publication of the UK IBD report but it did not report information of perioperative complications.

Long-term complications following surgery

Furthermore, it is known that a proportion of patients experience long-term complications following surgery. Of the five UK studies identified in our search, Tappenden et al. used a Japanese study to inform the economic analysis of the probability of chronic surgery-related complications. Arai et al. included 296 patients with UC who underwent restorative proctocolectomy and reported on the overall incidence of complications (early and late).

After relaxing our review criteria and considering all relevant studies regardless of the nationality of the cohort (119 records), we identified two studies with useful information on long-term, post-surgery complications.

One study was from Japan, based on 284 patients with UC who underwent a total proctocolectomy and IPAA. Suzuki et al. included 296 patients with UC who underwent restorative proctocolectomy and reported on the overall incidence of complications (early and late).

Another study, conducted in Leuven, Belgium, included an analysis of 173 patients who underwent proctocolectomy with IPAA for UC or inflammatory bowel disease unclassified (IBDU). It reported that during a median follow-up of 6.5 years (IQR 3.4–9.9), 80 patients (46%) developed at least 1 episode of acute pouchitis.

Conclusions

Colectomy is still the last option for UC patients with an inadequate response to pharmacological treatments. The cumulative probability of colectomy, since diagnosis of UC, is reported to increase at a steady rate, with overall lower incidence compared with other non-UK studies. The incidence of perioperative complications is not consistently reported. Rates of long-term complications from surgery are not available from UK sources.
References


