

Supplementary methods

No randomized controlled trials adequate to our eligibility criteria were found in the search and therefore only non-randomized studies were included. Due to the great variability in study designs among non-randomized controlled trials, no generic tool to assess risk of bias exists. Therefore, we consulted the Cochrane Handbook of conducting systematic reviews (15). Complaint with the Cochrane recommendations we developed a modified risk of bias tool to assess risk of bias in our included studies. We modified the Newcastle-Ottawa scale (NOS) developed for case-control- and cohort studies (16). The modifications made it applicable also for cross-sectional studies, which complied a big proportion of the studies in our review.

The NOS is comprised of three basic elements: selection, comparability, and outcome. The major modifications we made to the scale in terms of selection were redefinitions about timing of outcome. In the original scale, applicable for cohort studies, demonstration that the outcome was not present at the start of the study is an item. We defined that in cross-sectional studies, demonstration that the outcome was not present prior to surgery was the essential matter, because both intervention and outcome is present at the study time in this study design. The changes, in terms of comparability, were to define which factor we were most interested in controlling. This factor was disease activity since earlier studies have shown that this factor strongly correlated with the risk of developing psychiatric diseases in IBD (1). In terms of outcome, we defined the adequacy of follow-up to be one year. Follow-up in cross-sectional studies is a different matter because outcomes and risk factors are assessed at the same time. Therefore, in the outcome section cross-sectional studies could maximum be given two stars. For each included study the following check-list was performed.

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE

**Modified to “Psychiatric Comorbidity after Surgery for Inflammatory Bowel Disease
– a Systematic Review”.**

Selection (maximum of 4 stars)

1) Representativeness of the exposed cohort

- ☐ truly representative of the average IBD/CD/UC patient *
- ☐ somewhat representative of the average IBD/CD/UC patient *
- ☐ selected group of users (e.g. pouch patients, stoma patients, only those choosing to reply to a questionnaire)
- ☐ no description of the derivation of the cohort

2) Selection of the non-exposed cohort/comparison group

- ☐ drawn from the same community as the exposed cohort *
- ☐ drawn from a different source
- ☐ no description of the derivation of the non-exposed cohort, no comparison group exists.

3) Ascertainment of exposure

- ☐ secure record (e.g. surgical records) *
- ☐ structured interview *
- ☐ written self-report (e.g. self-reported history of surgery)
- ☐ no description

4) Demonstration that outcome of interest was not present at start of study (for cross-sectional studies, demonstration that the outcome of interest was not present prior to surgery)

- ☐ yes *
- ☐ no

Comparability (maximum of two stars)

1) Comparability of cohorts on the basis of the design or analysis

- ☐ study controls for IBD disease activity *

- ☐ study controls for additional factors *

Outcome/Exposure (for cohort studies max 3 stars, cross-sectional studies max 2 stars)

1) Assessment of outcome

- ☐ ICD/DSM records *
- ☐ psychotropic drug use from records *
- ☐ self-report through rating-scales
- ☐ no description

2) Was follow-up long enough for outcomes to occur (in cross-sectional studies follow-up is understood as time since intervention)

- ☐ yes (>1year follow-up) *
- ☐ no (or only some had follow-up >1year)
- ☐ no description

3) Adequacy of follow up of cohorts (ONLY cohort studies)

- ☐ complete follow up - all subjects accounted for *
- ☐ subjects lost to follow up unlikely to introduce bias - small number lost - > 90% follow up, or description provided of those lost) *
- ☐ follow up rate < 90% and no description of those lost
- ☐ no statement

Comment about bias:

