# **Supplementary data**

One individual was excluded from the analysis after visual inspection of the data as she was deemed an extreme case that may falsely affect the analyses. The patient was a female diagnosed with CD at age of 16 or 17. At admission she had ileocolic CD with small bowel involvement, structuring behaviour and perianal disease. She was admitted totally for 60 days and had 16, 20 and 28 days with energy intake under 30, 50 and 70% of the calculated requirement respectively. The analyses including this patient are shown in Table 1S, 2S and 3S. The association between the risk of relapse and inadequate nutritional intake during acute IBD flare were stronger with inclusion of this patient but remained significant even after exclusion of this patient. This implies that the findings of the current study probably apply to this subgroup of patients with very severe disease and prolonged admissions, but this should be studied in a larger group of such patients.

**Table 1S. Significant risk factors of inadequate energy intake during the inpatient period without exclusion of the outlier, (n=92).** The total number of observations (obs. (n)) indicates how many pairs of predictors and outcomes were available when the association analysis was done.

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| --- | --- | --- | --- | --- | --- |
| **Outcome** | **Predictor** | **k** | **p-value** | **95% CI** | **obs. (n)** |
| The nr of days with energy intake <30% of the calculated requirement  | Age at admission in years | 0.04 | 0.03 | 0.004-0.074 | 63 |
| The nr of days with energy intake <30% of the calculated requirement  | Disease duration at admission in years | 0.1 | 0.0002 | 0.06-0.19 | 54 |
| The nr of days with energy intake <50% of the calculated requirement  | Age at admission in years | 0.05 | 0.03 | 0.006-0.100 | 63 |
| The nr of days with energy intake <50% of the calculated requirement  | Disease duration in years | 0.2 | 0.0007 | 0.07-0.24 | 54 |
| The nr of days with energy intake <70% of the calculated requirement  | Age at admission in years | 0.08 | 0.01 | 0.02-0.15 | 63 |
| The nr of days with energy intake <70% of the calculated requirement  | Disease duration in years | 0.2 | 0.0006 | 0.1-0.4 | 54 |

Abbreviations: k = regression coefficient; CI = confidence interval; n = the total number of subjects, obs.=observations; nr = number.

**Table 2S. Factors significantly associated with disease course without exclusion of the outlier, (n=92 for the outcome “Surgery during the inpatient period or during the first three months after discharge” and n=84 for other outcomes**. The total number of observations (obs. (n)) indicates how many pairs of predictors and outcomes were available when the association analysis was done.

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| --- | --- | --- | --- | --- | --- |
| **Outcome** | **Predictor** | **k** | **p-value** | **95% CI** | **obs. (n)** |
| Number of steroid prescriptions during the FU year | The nr of days with energy intake <30% of the calculated requirement  | 0.3 | 0.0001\* | 0.2-0.5 | 58 |
| The nr of days with energy intake <50% of the calculated requirement  | 0.3 | 0.0003\* | 0.1-0.4 | 58 |
| The nr of days with energy intake <70% of the calculated requirement  | 0.2 | 0.00004\* | 0.1-0.3 | 58 |
| The % of days with energy intake <30% of the calculated requirement  | 0.03 | 0.04\* | 0.001-0.06 | 58 |
| The nr of consultations with a dietitian | 0.2 | 0.0006\* | 0.1-0.3 | 83 |
| Consultation with a dietitian (y/n) | 0.8 | 0.04 | 0.04-1.55 | 83 |
| Length of the inpatient period | 0.07 | 0.0004\* | 0.03-0.10 | 83 |
| Number of readmissions during the FU year | Ongoing immunosuppressive or biological medication at admission | 0.9 | 0.014 | 0.2-1.6 | 83 |
| The total change of BMI during the inpatient period | 0.4 | 0.04 | 0.02-0.7 | 82 |
| **Outcome** | **Predictor** | **HR** | **p-value** | **95% CI** | **obs. (n)** |
| Time to the first steroid prescription | Length of the inpatient period | 1.03 | 0.015 | 1.01-1.06 | 83 |

Abbreviations: k = regression coefficient; CI = confidence interval; obs. = observations; n = the total number of subjects; FU = follow-up; BMI = body mass index; HR = hazard ratio. \*Sensitivity analyses showed that significances of these associations were affected by one person. If that one person was excluded, all these p-values would be greater than 0.05.

**Table 3S. Significant risk factors of inadequate nutritional intake during the inpatient period, subgroup analyses.** The total number of observations (obs. (n)) indicates how many pairs of predictors and outcomes were available when the association analysis was done. The four tested subgroups were: only colitis (Crohn’s disease or Ulcerative colitis), small bowel inflammation with or without colonic involvement, Crohn’s disease, and ulcerative colitis.

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| --- | --- | --- | --- | --- | --- | --- |
| **Outcome** | **Subgroup** | **Predictor** | **k** | **p-value** | **95% CI** | **obs. (n)** |
| Number of days with energy intake <30% of the calculated requirement  | Small bowel inflammation | Sex | 1.3 (for male) | 0.00015 | 0.9-1.8 | 10 |
| Number of days with energy intake <70% of the calculated requirement  | Only colitis | Age at admission | 0.06 | 0.018 | 0.01-0.12 | 50 |
| Number of days with energy intake <30% of the calculated requirement  | Only colitis | Age at admission | 0.03 | 0.021 | 0.005-0.06 | 50 |
| Number of days with energy intake <50% of the calculated requirement  | Small bowel inflammation | Sex | 1.6 (for male) | 0.027 | 0.2-2.9 | 10 |
| Number of days with energy intake <50% of the calculated requirement  | Only colitis | Age at admission | 0.04 | 0.032 | 0.003-0.07 | 50 |
| Number of days with energy intake <30% of the calculated requirement  | Crohn’s disease | CRP at day 1 | 0.004 | 0.045 | 0.0001-0.5 | 30 |
| Number of days with energy intake <70% of the calculated requirement  | Crohn’s disease | Age at admission | 0.06 | 0.048 | 0.0006-0.1 | 30 |

Abbreviations: k = regression coefficient; CI = confidence interval; n = the total number of subjects, obs.=observations.

385 DS

146 excluded

-n=23 excluded because of no established IBD diagnosis and no suspicion of IBD debut.

-n=8 excluded because of no confirmation of suspected IBD.

-n= 115 excluded because of no fulfilment of the criteria for acute severe flare.

148 excluded

-62 excluded because of multiple inclusions of the same patient.\*

-85 excluded because consent not obtained

-1 excluded as an outlier

156 excluded

- 28 excluded because of bowel resection surgery during the inpatient period or first three months of the FU year

-48 excluded because of multiple inclusions of the same patient.\*

-79 excluded because consent not obtained

-1 excluded as an outlier

91 patients included in the analyses that do not require one-year FU

83 patients included in the analyses that require one-year FU

**Figure S1. Flowchart showing reasons for exclusion of DS.** Abbreviations: DS = discharge summaries; IBD = inflammatory bowel diseases; FU=Follow-up. \*In case of multiple inclusion of one patient, the patient was included by the first valid inpatient period during the period 2015-2016, and subsequent admissions of that patient were excluded from the set of study subjects.