

**Supplementary Appendix 1: Search strategies**

Supplemental Table 1   Search strategy
<b>Medline search strategy</b>
(Inflammatory Bowel Disease[Mesh] or Crohn disease[tw] or Crohn Disease[Mesh] or Crohn disease[tw] or Crohn's Enteritis*[tw] or Ulcerative colitis*[tw] or Crohn's Disease[tw] or Crohns Disease[tw] or Ileocolitis*[tw] or Granulomatous Colitis*[tw] or Terminal Ileitis[tw])
AND
(Coronavirus[Mesh] or Coronavirus[tw] or COVID-19[Mesh] or COVID-19[tw] or SARS-COV-2[Mesh] or SARS-COV-2[tw] or severe[tw] or [hospitalization[tw])
AND
("Biologics"[Mesh] or Biologic*[tw] or Biopharmaceutical*[tw] or Biological Drug*[tw] or Biological*[tw] or Biologic Medicine*[tw] or Biologic Pharmaceutical*[tw] or Biologic Drug*[tw] or Biological Medicine[tw] or "Monoclonal Antibodies"[Mesh] or Monoclonal Antibody*[tw] or anti-TNF[tw] or "Tumor Necrosis Factor alpha"[Mesh] or Tumor Necrosis Factor alpha[tw])
OR
("corticosteroid"[Mesh] OR corticosteroid*[tw] OR steroid*[tw] OR ("janus kinase inhibitors"[Mesh] OR janus kinase inhibitors*[tw] OR tofacitinib[tw] OR jak inhibitor*[tw]) OR ("mesalamine"[Mesh] OR aminosalicilate*[tw] OR mesalamine*[tw] OR 5-aminosalicylic acid*[tw] OR Asacol*[tw] OR Pentasa*[tw] OR Rowasa*[tw])
OR
("azathioprine"[Mesh] OR azathioprine*[tw] OR Imuran*[tw] OR ("methotrexate"[Mesh] OR methotrexate*[tw])
<b>Embase search strategy</b>

(Crohn disease.tw. or Crohn's Enteritis.tw. or Regional Enteritis.tw. or Inflammatory Bowel Disease.tw. or Ileocolitis.tw. or Granulomatous Colitis.tw. or Terminal Ileitis.tw. or Regional Ileitides.tw. or Regional Ileitis.tw.)

AND

(Coronavirus.tw. or COVID-19.tw. or SARS-COV-2.tw. OR severe.tw. OR hospitalization.tw. OR mortality.tw.)

AND

(Biologic\*.tw. or Biopharmaceutical\*.tw. or Biological Drug\*.tw. or Biological\*.tw. or Biologic Medicine\*.tw. or Biologic Pharmaceutical\*.tw. or Biologic Drug\*.tw. or Biological Medicine.tw. or Monoclonal Antibody\*.tw. or adalimumab.tw. or certolizumab.tw. or infliximab.tw. or ustekinumab.tw. or vedolizumab.tw. or natalizumab.tw. or Risankizumab.tw)

AND

(Corticosteroid.tw. OR steroid.tw. OR janus kinase inhibitors.tw. OR tofacitinib.tw. OR jak inhibitor.tw. OR aminosalicylate.tw. OR mesalamine.tw. OR 5-aminosalicylic acid.tw. OR Asacol.tw. OR Pentasa.tw. OR Rowasa.tw.)

OR

(Azathioprine.tw. OR Imuran.tw. OR methotrexate.tw.)

**Table 2: Quality Assessment**

Study	Selection			Comparability	Outcome			Total score (maximum: 8 stars)
	Representativeness of sample (maximum: one star)	Sample size (maximum: one star)	Assessment of the exposure (maximum: one star)	Comparability of cohorts on the basis of the design or analysis (maximum: 2 stars)	Assessment of the outcome (maximum: one star)	Was follow up long enough? (maximum: one star)	Adequacy of follow up cohorts (maximum: one star)	
Allocca et al	*		*	*	*			**** (4)
Annapureddy et al	*	*	*	**	*			***** (6)
Attauabi et al	*	*		**	*			***** (5)
Axerlrads et al		*	*	*	*			**** (4)

Bezzio et al	*	*		**	*			***** (5)
Bezzio et al (2)	*	*			*	*		**** (4)
Burke et al	*	*		*	*			**** (4)
Calafat et al	*	*	*	*	*			***** (5)
Conley et al	*	*	*		*			**** (4)
Derikx et al	*	*			*			**** (4)
Gubatan et al	*	*	*	**	*			***** (6)
Kennedy et al	*	*		*	*			**** (4)
Khan et al	*	*	*	*		*		***** (5)
Lamp et al	*	*	*	*				**** (4)
Lukin et al	*		*	*	*		*	***** (5)
Meyer et al	*	*	*	*	*			**** (5)
Rizzello et al	*	*	*	**	*			***** (6)
Rodríguez-Lago et al		*	*	*	*			**** (4)
Singh et al	*	*	*	*	*		*	***** (6)
Taxonera et al	*	*		**	*			***** (5)
Vadan et al	*	*	*		*			**** (4)

**Table 3: Risk of Bias**

Study	Risk of bias
Allocca et al	Low
Attauabi et al	Low
Axerlrud et al	Low
Bezzio et al	Low
Bezzio et al (2)	Low
Burke et al	Low
Calafat et al	Low
Conley et al	Low
Derikx et al	Moderate
Gubatan et al	Low
Kennedy et al	Low
Khan et al	Low
Lamp et al	Low
Lukin et al	Low
Meyer et al	Low
Rizzello et al	Low

Rodríguez-Lago et al	Low
SECURE-IBD	Moderate
Singh et al	Low
Taxonera et al	Low
Vadan et al	Low

Supplementary Figure 1

