Supplementary Materials

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Supplementary Table

Table S1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Checklist

Section and Topic	Item #	Checklist item	Page number
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	4-5
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	7-8
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	8
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	9
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	8-9
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	8-9; Table S2
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	9
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	9-10
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	9
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	9-10
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	10
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	10-11
Synthesis	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention	10-11

methods		characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	11
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	10-11
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	11
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not applicable
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicable
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	11-12; Figure S1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Not applicable
Study characteristics	17	Cite each included study and present its characteristics.	12; Table S3
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	12; Table S4
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Table S3
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Not applicable
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	12-16; Figure 1-3
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Not applicable
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	16-17; Figure S3
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Not applicable
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicable
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	18-22

	23b	Discuss any limitations of the evidence included in the review.	22-23
	23c	Discuss any limitations of the review processes used.	22-23
	23d	Discuss implications of the results for practice, policy, and future research.	18, 19, 21
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	8
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	8
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicable
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	2
Competing interests	26	Declare any competing interests of review authors.	2
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	23

Table S2 Search strategy

PubMed	**Search:** ((ulcerative colitis) AND (colectomy OR pancolectomy OR resection OR surgery OR operation) AND (predict OR prediction OR risk factor OR prognostic OR prognosis)) NOT ((ulcerative colitis) AND (colectomy OR pancolectomy OR resection OR surgery OR operation) AND (predict OR prediction OR risk factor OR prognostic OR prognosis) AND (meta-analysis[Filter] OR review[Filter] OR systematic review[Filter]))
	Results: N=5,452
Web of Science	**Search:** ALL=((ulcerative colitis) AND (colectomy OR pancolectomy OR resection OR surgery OR operation) AND (predict OR prediction OR risk factor OR prognostic OR prognosis)) and Review Papers or Conference Abstracts or Letters or Reprints or Book Chapters or Online publications or editorial material or conference proceedings papers (exclusions – document types)
	Results: N=4,515

Table S3 Characteristics of eligible studies

Author (year)	Study design	Country	Age, *years*	Sample size (Male)	Definition of ASUC	Follow-up period	Time of colectomy	Concomitant medications
Boyd (2024)[1]	Retrospective cohort	United States	Mean (range): 73.9 [64–90] for whom older than 65; 37.2 [14–64] for whom younger than 65	200 (114)	Truelove and Witt's criteria	More than 1 year	Any time during hospitalization; 1 year	Corticosteroid Infliximab Cyclosporine
García (2024)[2]	Retrospective cohort	Spain	Median (IQR): 34.9 (26.4–46.7)	78 (42)	UC with a partial mayo score over 6 and a Lichtiger colitis activity index over 9 before third-line rescue treatment	30 days after colectomy or 1 year	1 year	Corticosteroid Vedolizumab Ustekinumab Janus kinase inhibitors Infliximab
Huang (2024)[3]	Retrospective cohort	Australia	Mean: 36.1	167 (97)	Truelove and Witt's criteria	Long term (follow until	30 days; Any time over	Corticosteroid Infliximab

						colectomy or lost)	1 year	Cyclosporine intravenous ganciclovir or valganciclovir for CMV
Clark (2023)[4]	Retrospective cohort	Australia	Median (IQR): 32 (25–46)	139 (64)	Truelove and Witt's criteria	More than 1 year	30 days; 6 months; 1 year	Corticosteroid Infliximab Cyclosporine
Subhahaaran (2023)[5]	Retrospective cohort	Australia	Median (IQR): 71 (63-77) for patients ≥ 60, 32 (24-42) for patients < 60	226 (116)	Truelove and Witt's criteria	Median (IQR), week: 104 (20-160) for patients ≥ 60, 74 (30-168) for patients < 60	Any time during hospitalization; 3 months; 1 year	Corticosteroid Infliximab Cyclosporine
Zhang (2023)[6]	Retrospective single-center cohort	China	Median (IQR): 65 (62.75-69.25) for patients ≥ 60, 34 (28-44) for patients < 60	74 (46) for the adult group, 74 (46) for the elderly group	Truelove and Witt's criteria	Median: 37.5 months	Any time over 1 year	5-aminosalicylic acid Corticosteroid Immunomodul

								ators Biologics
Barnes (2022)[7]	Retrospective cohort	Australia	Median (IQR): 38 (25–46)	92 (42)	Truelove and Witts criteria	Median 21 months	Any time during hospitalization; 1 year	Corticosteroids Infliximab Cyclosporine
Con (2022)[8]	Retrospective single-center cohort	Australia	Median (IQR): 35 (26–53)	94 (63)	Modified Truelove and Witts criteria	12 months	1 year	Corticosteroids Infliximab
Ostrowski (2022)[9]	Retrospective cohort	Australia	Mean (SD): 36.1 (15.9) for no viral infection; 34.6 (13.3) for viral infection	147 (59)	Truelove and Witts criteria	Mean (SD): 7.95 (3.9) days for no viral infection; 7.95 (2.6) days for viral infection	Any time during hospitalization	Corticosteroids Anti-tumor necrosis factor Cyclosporine
Ge (2022)[10]	Retrospective cohort	China	Mean (SD): 43.9 (0.9)	254 (161)	Truelove and Witts criteria	12 months	Any time during hospitalization;	Corticosteroids Infliximab

							1year	Cyclosporine
Syal (2021)[11]	Retrospective cohort	United States	Median (IQR): 37 (30–53)	63 (28)	Truelove and Witts Criteria	Median (IQR): 20 (7.7–45.1) months	90 days; 1 year	Corticosteroids Infliximab
Le Baut (2021)[12]	Retrospective cohort	France	Median (IQR): 32 (24–47)	270 (134)	Truelove and Witts criteria; clinical activity index; endoscopy	Median (IQR): 30 (7–66) months	1 year	Corticosteroids Cyclosporine Anti-tumor necrosis factor
Battat (2021)[13]	Retrospective cohort	United States	Median (IQR): 31 (20.0–46.5)	39 (21)	Truelove and Witts criteria; either clinical or laboratory features of the severity criteria	12 months	30 days; 6 months; 1 year	Infliximab

Moore (2020)[14]	Retrospective cohort	Canada	Median (IQR): 34 (25.8–50.5)	80 (47)	Clinical Mayo scores ≥6 on admission to hospital, with an endoscopic Mayo score of ≥2	3 months	Any time during hospitalization; 30 days; 3 months	Corticosteroids
Ma (2020)[15]	Retrospective cohort	China	Mean (SD): 42.1 (14.8)	71 (32)	Truelove and Witts criteria	Median 14 days	Any time during hospitalization	Corticosteroids Infliximab Cyclosporine
Wu (2019)[16]	Retrospective case-control	China	Median (range): 43.0 (15.0–78.0) for medical-response patients; 40.0 (16.0–80.0) for surgical patients	152 (88)	UC with bloody stools >6 times per day, along with any sign of systemic toxicity	6 months	6 months	Corticosteroids
Bernardo	Retrospective cohort	Portugal	Median (range): 33.5 (18–80)	112 (58)	Truelove and Witts criteria	1 year	1 year	Corticosteroids

(2019)[17]								Infliximab Cyclosporine
Patrick (2018)[18]	Retrospective cohort	Australia	Mean (SD): 36.24 (16.56) for no colectomy; 40.45 (16.17) for colectomy	200 (97)	Truelove and Witts criteria	1 year	30 days; 1 year	Immunomodulator Corticosteroids
Cushing (2018)[19]	Retrospective cohort	United States	Mean (range): 43 (9–86)	82 (57)	Severe hospitalized UC patients	1 year	Any time during hospitalization; 3 months; 1 year	Corticosteroids Anti-tumor necrosis factor Cyclosporine
Beswick (2018)[20]	prospective cohort	Australia	Median (range): 36 (18–72)	24 (12)	Truelove and Witts criteria	Median (range): 28 (13–44) months	1 year; Any time over 1 year	Corticosteroids Infliximab
Jain (2018)[21]	Retrospective cohort	India	Mean (SD): 35.4 (11.8)	179 (94)	Truelove and Witts criteria	During hospitalization	Any time during hospitalization; Any time over	Corticosteroids 5-aminosalicylic

							1 year	acid Infliximab Cyclosporine
Shah (2018)[2] [2]	Retrospective cohort	United States	Median (range): 35 (16–82) for standard-dose infliximab; 22 (8–86) for high-dose infliximab	146 (75)	Hospitalized for acute UC	1 year	30 days; 3 months; 1 year	Infliximab
Xie (2018)[2] [3]	Retrospective cohort	China	Mean (SD): 42.1 (14.8)	92 (50)	Truelove and Witts criteria with one or more additional criteria (C-reactive protein > 30 mg/dL)	Median (range): 73.7 (40.1–123.1) weeks	Any time over 1 year	Corticosteroids Infliximab Cyclosporine
Al-Darmak	Retrospective cohort	Canada	18–34 (49%) 35–64 (41%)	489 (284)	Standard clinical	3 years	3 years	Corticosteroids

i (2017)[24]			>65 (10%)		diagnostic criteria			5-aminosalicylic acid Azathioprine Infliximab
Lee (2016)[25]	Retrospective cohort	Republic of Korea	Median (range): 45 (16–75) for Cytomegalovirus infection; 42 (16–78) for no Cytomegalovirus infection	149 (80)	Truelove and Witts criteria	During hospitalization	Any time during hospitalization	Corticosteroids
Lynch (2016)[26]	Retrospective cohort	United Kingdom	Median (IQR): 38 (27–56) for Travis high; 37 (26–53) for Travis low	420 (217)	Truelove and Witts criteria	During hospitalization	Any time during hospitalization	Corticosteroids Cyclosporine Anti-tumor necrosis factor Thiopurine

Fernandes (2016)[27]	Retrospective cohort	Portugal	Median (range): 34.5 (15–80)	108 (60)	Truelove and Witts criteria	Median (range): 33 (2–120) months	Any time over 1 year	Corticosteroids Infliximab Cyclosporine
Deiana (2016)[28]	Retrospective cohort	Italy	Mean (SD): 44.1 (17.1)	86 (54)	Truelove and Witts criteria	Mean (range): 19.5 (2–72) months	Any time during hospitalization; 30 days; Any time over 1 year	Corticosteroids Infliximab Cyclosporine
Corte (2015)[29]	Retrospective cohort	United Kingdom	Median (range): 34 (16–84)	89 (48)	Truelove and Witts criteria	Median (range): 14 (2–33) months	Any time over 1 year	Corticosteroids
Gibson (2015)[30]	Retrospective cohort	Ireland	Median (IQR): 34 (28–43) for standard-dose infliximab; 38 (31–54) for accelerated dose	50 (35)	Truelove and Witts criteria	Median: 2.4 years for standard-dose infliximab; 1.6 years for	During infliximab induction	Infliximab

						accelerated dose		
Pagoldh (2014)[3] [1]	prospective cohort	Sweden	Median (range): 30.5 (18–56)	18 (11)	A severe attack of extensive or left-sided UC and negative fecal cultures; Mayo score/Disease Activity Index and a total value greater than 10	Median (range): 37.5 (0.5–58) months	Any time over 1 year	Corticosteroids 5-aminosalicylic acid Infliximab
Monterubbianesi (2014)[3]	Retrospective cohort	Italy	Median (IQR): 37 (14–76)	113 (49)	Truelove and Witts criteria and modified by Chapman et al	Median (range): 18 (0–102) months	3 months; 1 year	Infliximab

[2]								
Molnár (2011)[3] [3]	Retrospective cohort	Hungary	Mean (range): 33.2 (12–69)	183 (88)	Truelove and Witts criteria and Mayo score	Mean (range): 4.4 (1.1–10) years	Any time over 1 year	Corticosteroids Cyclosporine Infliximab Azathioprine
Lian (2010)[3] [4]	Retrospective case-control	United States/ China	Mean (SD): 38.7 (18.1)	223 (106)	Exacerbation of UC	During hospitalization	Any time during hospitalization	Narcotics Corticosteroids Infliximab 6-mercaptopurine
Kobayashi (2010)[3] [5]	Retrospective cohort	Japan	Mean (range): 33 (16–70)	72 (35)	Severe UC flare-up	5 years	1 year; 3 years; 5 years	Corticosteroids Cyclosporine Immunomodulator

Ho (2009)[36]	prospective cohort	United Kingdom	Median (IQR): 37 (29–54)	90 (40)	Truelove and Witts criteria	Median (IQR): 1.10 (0.54–1.71) years	Any time over 1 year	Corticosteroids Infliximab
Allison (2008)[37]	Retrospective cohort	United States	0–29 (23.5%) 30–49 (40.1%) 50–89 (36.4%)	656 (328)	A principle diagnosis of UC & use of intravenous steroids at initial hospitalization	Up for 9 years	Any time during hospitalization; 3 months; 1 year; 5 years	Corticosteroids
Moskovitz (2006)[38]	Retrospective cohort	Belgium	Mean (range): 41 (16–76)	142 (77)	Severe attack of UC	Mean (range): 542 (42–1271) days	Any time during hospitalization; Any time over 1 year	Corticosteroids Cyclosporine

Ho (2004)[39]	Retrospective cohort	United Kingdom	Median (IQR): 38 (27–54)	167 (103)	Modified Truelove and Witts criteria	Median (range): 2.4 (1.4–3.2) years	Any time during hospitalization	Corticosteroids 5-aminosalicylic acid Cyclosporine
Lindgren (1998)[40]	Retrospective case-control	Sweden	Mean (range): 47.5 (17–90)	97 (55)	Established clinical, endoscopic, histopathological criteria	24 months	30 days	Corticosteroids
Travis (1996)[41]	prospective cohort	United Kingdom	Median (range): 43 (21–77)	49 (26)	Truelove and Witts criteria	Median (range): 12 (3.5–21) months	1 year	Corticosteroids Cyclosporine
Chew (1991)[42]	Retrospective cohort	United Kingdom	Mean (SD): 42.8 (18) for no colectomy; 42.4 (16.8) for colectomy	75 (37)	Truelove and Witts criteria	Median (range): 7.8 years (range 1 week–28	Any time over 1 year	Corticosteroids

years)

IQR, interquartile range; SD, standard deviation; UC, ulcerative colitis.

Table S4 Study quality assessment using the Newcastle-Ottawa Scale

Author (Year)	Selection				Comparability	Outcome			Total
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	The outcome of interest did not occur before the intervention		Method of outcome measurement	Follow-up time	Integrity of follow-up	
Boyd (2024)[1]	1	1	1	1	2	1	1	0	8
García (2024)[2]	1	1	1	1	1	1	1	1	8
Huang (2024)[3]	1	1	1	1	1	1	1	0	7
Clark (2023)[4]	1	1	1	1	1	1	1	1	8
Subhaharan (2023)[5]	1	1	1	1	2	1	1	1	9
Zhang (2023)[6]	1	1	1	1	1	1	1	1	8
Barnes (2022)[7]	1	1	1	1	2	1	1	0	8
Con (2022)[8]	1	1	1	1	2	1	1	1	9

Ostrowski (2022)[9]	1	1	1	1	0	1	1	1	7
Ge (2022)[10]	1	1	1	1	2	1	1	1	9
Syal (2021)[11]	1	1	1	1	2	1	1	1	9
Le Baut (2021)[12]	1	1	1	1	2	1	1	1	9
Battat (2021)[13]	1	1	1	1	2	1	1	1	9
Moore (2020)[14]	1	1	1	1	2	1	1	1	9
Ma (2020)[15]	1	1	1	1	2	1	1	1	9
Wu (2019)[16]	1	1	1	1	2	1	1	1	9
Bernardo (2019)[17]	1	1	1	1	1	1	1	0	7
Patrick (2018)[18]	1	1	1	1	1	1	1	1	8
Cushing (2018)[19]	1	1	1	1	2	1	1	1	9
Beswick (2018)[20]	1	1	1	1	2	1	1	1	9
Jain (2018)[21]	1	1	1	1	0	1	1	1	7
Shah (2018)[22]	1	1	1	1	2	1	1	1	9

Xie (2018)[23]	1	1	1	1	2	1	1	1	9
Al-Darmaki (2017)[24]	1	1	1	1	2	1	1	1	9
Lee (2016)[25]	1	1	1	1	1	1	0	1	7
Lynch (2016)[26]	1	1	1	1	2	1	1	1	9
Fernandes (2016)[27]	1	1	1	1	2	1	1	1	9
Deiana (2016)[28]	1	1	1	1	2	1	1	1	9
Corte (2015)[29]	1	1	1	1	1	1	1	1	8
Gibson (2015)[30]	1	1	1	1	2	1	1	1	9
Pagoldh (2014)[31]	1	1	1	1	2	1	1	1	9
Monterubbianesi (2014)[32]	1	1	1	1	2	1	1	1	9
Molnár (2011)[33]	1	1	1	1	2	1	1	1	9
Lian (2010)[34]	1	1	1	1	1	1	1	1	8
Kobayashi (2010)[35]	1	1	1	0	2	1	1	1	8
Ho (2009)[36]	1	1	1	1	2	1	1	1	9

Allison (2008)[37]	0	1	1	1	0	1	1	1	6
Moskovitz (2006)[38]	1	1	1	1	2	1	1	1	9
Ho (2004)[39]	1	1	1	1	2	1	1	1	9
Lindgren (1998)[40]	1	1	1	1	2	1	1	1	9
Travis (1996)[41]	1	1	1	1	2	1	1	1	9
Chew (1991)[42]	1	1	1	1	2	1	1	1	9

Table S5 Predictors for colectomy not available for meta-analysis

Risk factor	Variable types	Author (year)	Performance
Colectomy within one year			
Biomarkers			
Albumin	Continuous (g/L)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 33 (28–37) vs 27 (23–34) (P<0.01)
	Continuous (g/L)	Con (2022)[8]	Median (IQR) (no colectomy vs colectomy): 32 (27–35) vs 27 (22–32) (P=0.025)
	Continuous (g/L)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 36.1 (5.4) vs 32.1 (5.2) (P<0.001)
	Continuous (g/L)	Gibson (2015)[30]	RR: 0.84 (95% CI: [0.75–0.95], P=0.003)
	Continuous (g/L)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 37.0 (32.5–41.0) vs 34.5 (30.3–37.8) (P=0.012)
	Continuous (g/dL)	Moskovitz (2006)[38]	Mean (range) (no colectomy vs colectomy): 34 (17–52) vs 32 (17–39)
	Dichotomous (25.8 g/L)	Ma (2020)[15]	Sensitivity: 77.1%; Specificity: 70.4%; AUC: 0.692 (95% CI: [0.603–0.747], P=0.036)
Baseline IFX clearance	Dichotomous (≥0.627 L/day)	Battat (2021)[13]	OR: 8.8 (95% CI: [1.88–41.21], P<0.01)

C-reactive protein	Continuous (mg/L)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 40 (14–76) vs 86 (37–124) (P=0.01)
	Continuous (mg/L)	Con (2022)[8]	Median (IQR) (no colectomy vs colectomy): 46 (20–100) vs 65 (39–177) (P=0.140)
	Continuous (mg/L)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 29.4 (31.1) vs 30.1 (29.0) (P=0.876)
	Continuous (mg/dL)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 32.0 (11.0–74.0) vs 53.0 (25.3–128.5) (P=0.029)
	Continuous (mg/L)	Moskovitz (2006)[38]	Mean (range) (no colectomy vs colectomy): 65 (1–377) vs 109 (15–283)
	Dichotomous (5 mg/L)	Gibson (2015)[30]	Sensitivity: 83.3%; Specificity: 92.9%; Positive predictive value: 96.8%; Negative predictive value: 68.4%
C-reactive protein–albumin ratio	Continuous (mg/g)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 1.2 (0.5–2.7) vs 2.7 (1.2–5.3) (P<0.01)
	Continuous (mg/g)	Con (2022)[8]	AUC: 0.640 (95% CI: [0.500–0.781])
C-reactive protein-lymphocyte rate	Continuous (mg/10^9)	Con (2022)[8]	AUC: 0.669 (95% CI: [0.536–0.802])
Erythrocyte sedimentation rate	Continuous (mm/h)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 22.1 (18.8) vs 27.0 (18.3) (P=0.067)

	Continuous (mm/h)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 20.0 (12.3–38.3) vs 36.0 (22.0–69.0) (P=0.09)
	Continuous (mm/h)	Ho (2004)[39]	OR: 1.01 (95% CI: [1.0–1.03], P=0.04)
Fecal calprotectin	Continuous (μg/g)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 887 (478–1,472) vs 1,200 (677–1,900) (P=0.04)
	Dichotomous (1672 μg/g)	Ma (2020)[15]	Sensitivity: 80.2%; Specificity: 66.7%; AUC: 0.740 (95% CI: [0.638–0.845], P=0.006)
	Dichotomous (≥ 1500 μg/L)	Wu (2019)[16]	OR: 10.673 (95% CI: [3.106–36.677], P< 0.001)
	Dichotomous (1,922.5 μg/g)	Ho (2009)[36]	Sensitivity: 24.0%; Specificity: 97.4%; Likelihood ratio: 9.23 (P=0.04)
	Dichotomous (431.5 μg/g)	Ho (2009)[36]	Sensitivity: 96.0%; Specificity: 20.5%; Likelihood ratio: 1.23 (P=0.04)
	Dichotomous (AUC 11,000 μg/ml)	Beswick (2018)[20]	Sensitivity: 89%; Specificity: 50%; AUC: 0.82 (95% CI: [0.63–1.00], P<0.05)
Hemoglobin	Continuous (g/L)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 128 (113–139) vs 117 (102–127) (P=0.04)
	Continuous (g/dl)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 11.9 (2.3) vs 10.5 (2.2) (P<0.001)

	Continuous (g/dl)	Le Baut (2021)[12]	HR: 0.88 (95% CI: [0.75–1.03], P=0.12)
	Continuous (g/L)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 131.0 (111.5–141.5) vs 126.5 (104.5–145.5) (P=0.59)
	Continuous (g/L)	Ho (2004)[39]	Mean (SD) (no colectomy vs colectomy): 12.3 (2.2) vs 11.7 (2.3) (P=0.09)
Lymphocytes	Continuous (10^9/L)	Con (2022)[8]	Median (IQR) (no colectomy vs colectomy): 1.5 (1.0–2.1) vs 1.0 (0.8–1.7) (P=0.060)
Neutrophil	Continuous (10^9/L)	Con (2022)[8]	Median (IQR) (no colectomy vs colectomy): 7.9 (6.0–11.3) vs 7.4 (4.7–10.7) (P= 0.560)
	Continuous (10^9/L)	Syal (2021)[11]	OR: 1.16 (95% CI: [1.01–1.32], P=0.04)
	Continuous (10^9/L)	Ho (2004)[39]	Mean (SD) (no colectomy vs colectomy): 8.9 (3.4) vs 9.8 (4.4) (P=0.18)
Neutrophil-lymphocyte ratio	Continuous	Con (2022)[8]	AUC: 0.578 (95% CI: [0.439–0.716])
Platelet	Continuous (10^9/L)	Con (2022)[8]	Median (IQR) (no colectomy vs colectomy): 392 (298–449) vs 392 (324–496) (P=0.660)
	Continuous (10^9/L)	Le Baut (2021)[12]	HR: 1.00 (95% CI: [0.99–1.00], P=0.52)
	Continuous (10^9/L)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 378.0 (337.5–468.5) vs 428.0 (342.0–567.0) (P=0.17)

	Continuous (10^9/L)	Ho (2004)[39]	OR: 1.03 (95% CI: [1.01–1.05], P=0.01)
Platelet-lymphocyte ratio	Continuous	Con (2022)[8]	AUC: 0.673 (95% CI: [0.536–0.809])
Procalcitonin	Dichotomous (≥ 0.10 μg/L)	Wu (2019)[16]	OR: 6.706 (95% CI: [1.891–23.773], P=0.003)
Serum IFX level	Dichotomous (AUC 216 mg/ml)	Beswick (2018)[20]	Sensitivity: 94%; Specificity: 66%; AUC: 0.89 (95% CI: [0.75–1.00], P<0.05)
White blood cell	Continuous (10^9/L)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 8.1 (3.3) vs 7.7 (3.4) (P=0.405)
	Continuous (10^9/L)	Le Baut (2021)[12]	HR: 1.00 (95% CI: [1.0–1.0], P=0.44)
	Continuous (10^9/L)	Ho (2009)[36]	Median (IQR) (no colectomy vs colectomy): 10.3 (8.5–13.5) vs 11.8 (8.0–15.2) (P=0.49)
Other auxiliary examination results			
Abdominal radiograph colonic diameter	Dichotomous (≥ 5.5cm)	Patrick (2018)[18]	OR: 4.56 (95% CI: [1.76–11.85], P=0.002)
Charlson index	Continuous	Le Baut (2021)[12]	HR: 1.18 (95% CI: [0.93–1.52], P=0.18)
Clostridium difficile infection	Categorical (Y)	Le Baut (2021)[12]	OR: 3.70 (95% CI: [0.90–15.15], P=0.09)

Clostridium difficile or Cytomegalovirus infection	Categorical (Y)	Lian (2010)[34]	OR: 0.5 (95% CI: [0.2–1.8], P=0.3)
Colonic dilatation	Categorical (N)	Ho (2004)[39]	OR: 0.04 (95% CI: [0.00–0.29], P<0.001)
Deep ulcers	Categorical (Y)	Deiana (2016)[28]	OR: 1.29 (95% CI: [0.39–4.22], P=0.67)
Edinburgh score (Ho score)	Ordinal	Bernardo (2019)[17]	OR: 0.919 (95% CI: [0.522–1.620], P=0.771); AUC: 0.753 (95% CI: [0.608–0.897])
	Categorical (4–9 vs 0–3)	Beswick (2018)[20]	Sensitivity: 82%, Specificity:43%
	Categorical (4–9 vs 2–3)	Lynch (2016)[26]	OR: 3.7 (95% CI: [1.8–7.6], P=0.0004)
	Categorical (4–9 vs 0–1)	Lynch (2016)[26]	OR: 2.4 (95% CI: [1.4–4.0], P=0.0012)
	Categorical (2–3 vs 0–1)	Lynch (2016)[26]	OR: 1.5 (95% CI: [0.73–3.2], P=0.338)
Extraintestinal manifestations	Categorical (Y)	Le Baut (2021)[12]	OR: 0.52 (95% CI: [0.12–2.30], P=0.55)
Mesenteric fat index	Continuous	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 0.62 (0.33) vs 0.70 (0.49) (P=0.144)
Mucosal islands on the plain abdominal radiograph	Categorical (Y)	Travis (1996)[41]	Percentage (no colectomy vs colectomy): 10% vs 50% (P=0.013)

Partial Mayo score	Dichotomous (AUC 20)	Beswick (2018)[20]	Days 1–3 post–initial IFX dose: Sensitivity: 61%; Specificity: 100%; AUC: 0.86 (95% CI: [0.71–1.00], P< 0.05)
Pulse	Continuous (times/min)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 96 (84–107) vs 89 (76–109) (P=0.14)
	Continuous (times/min)	Wu (2019)[16]	Median (range) (no colectomy vs colectomy): 80 (62–134) vs 83 (61–160) (P=0.101)
	Continuous (times/min)	Ho (2004)[39]	Mean (no colectomy vs colectomy): 84 vs 86.4 (P=0.42)
Segmental Mayo endoscopic score	Ordinal	Fernandes (2016)[27]	OR: 5.82 (95% CI: [0.940–36.043], P= 0.058)
Severe disease defined by partial Mayo score	Categorical (severe vs moderate)	García (2024)[2]	OR: 8.7 (95% CI: [2.0–38.1], P=0.55)
Severe endoscopic lesions	Categorical (Y)	Monterubbianesi (2014)[32]	OR: 7.50 (95% CI: [1.67–33.75], P=0.003)
Subcutaneous fat area	Continuous (cm^2)	Ge (2022)[10]	OR: 0.597 (95% CI: [0.301–1.181], P=0.138)
Temperature	Continuous (°C)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 37 (36–37) vs 37 (36–37) (P=0.45)

	Continuous (°C)	Wu (2019)[16]	Median (range) (no colectomy vs colectomy): 37.0 (36.0–41.0) vs 38.0 (36.1–40.4) (P=0.002)
	Continuous (°C)	Ho (2004)[39]	OR: 1.96 (95% CI: [1.02–3.85], P=0.04)
Ulcerative colitis endoscopic index of severity	Ordinal	Fernandes (2016)[27]	OR: 2.78 (95% CI: [1.48–6.77], P= 0.003)
	Dichotomous (6.5)	Ma (2020)[15]	Sensitivity: 69.0%; Specificity: 79.4%; AUC: 0.831 (95% CI: [0.733–0.927], P=0.010)
	Dichotomous (≥7)	Wu (2019)[16]	OR: 41.730 (95% CI: [7.146–243.688], P< 0.001)
Ulcerative colitis endoscopic index of severity (Segmental)	Ordinal	Fernandes (2016)[27]	OR: 1.79 (95% CI: [1.23–2.61], P= 0.003)
Viral enteric infection	Categorical (Y vs N)	Ostrowski (2022)[9]	Colectomy rate: 4.1% vs. 4.5% (P=0.698)
Visceral fat area	Continuous (cm^2)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 66.3 ± 37.7 vs 55.6 ± 39.4 (P=0.052)
Patient reported outcomes			
Abdominal pain	Categorical (Y)	Wu (2019)[16]	OR: 1.61 (95% CI: [0.47–5.48], P=0.56)
Bowel movements	Dichotomous (≥8 at day	Patrick (2018)[18]	OR: 1.93 (95% CI: [0.86–4.8], P=0.1145)

	1)		
	Dichotomous (≥5/day)	Lindgren (1998)[40]	OR: 10.29 (95% CI: [3.65–29.00], P<0.001)
Fluid stool	Categorical (Y)	Ho (2004)[39]	OR: 1.11 (95% CI: [0.46–2.71], P=0.82)
Lindgren score	Ordinal	Bernardo (2019)[17]	OR: 1.550 (95% CI: [0.984–2.439], P=0.058); AUC: 0.836 (95% CI: [0.712–0.960], P<0.01)
Stool frequency	Continuous (times/day)	Le Baut (2021)[12]	HR: 1.03 (95% CI: [0.99–1.08], P=0.15)
	Continuous (times/day)	Wu (2019)[16]	Median (range) (no colectomy vs colectomy): 8 (6–30) vs 9 (6–28) (P=0.213)
	Continuous (times/day)	Ho (2004)[39]	OR: 1.25 (95% CI: [1.12–1.39], P<0.001)
	Dichotomous (>8/day)	Ho (2004)[39]	OR: 3.45 (95% CI: [1.79–6.67], P<0.001)
Travis index	Categorical (high risk)	Beswick (2018)[20]	Sensitivity: 82%; Specificity:31%
Previous drug exposure			
Aminosalicylate	Categorical (Y)	Ho (2004)[39]	OR: 0.99 (95% CI: [0.54–1.85], P=1.00)
Anti-tumor necrosis factor	Categorical (Y)	Le Baut (2021)[12]	OR: 2.60 (95% CI: [1.10–6.14], P=0.03)
IFX	Categorical (Y)	Con (2022)[8]	OR: 0.30 (95% CI: [0.01–5.10], P=0.39)
Thiopurines	Categorical (Y)	Le Baut (2021)[12]	OR: 2.26 (95% CI: [1.05–4.88], P=0.06)

Topical therapy	Categorical (Y)	Ho (2004)[39]	OR: 0.51 (95% CI: [0.23–1.15], P=0.12)
Concomitant medications			
Biologics	Categorical (Y)	Lian (2010)[34]	OR: 1.04 (95% CI: [0.3–3.6], P=0.9)
Baseline cyclosporine	Continuous (days)	Moskovitz (2006)[38]	Mean (no colectomy vs colectomy): 9.2 vs 9.4
	Categorical (Y)	Ho (2004)[39]	OR: 2.44 (95% CI: [0.94–6.33], P=0.09)
Baseline heparin	Categorical (Y)	Ho (2004)[39]	OR: 5.26 (95% CI: [2.32–12.5], P<0.001)
Baseline IFX	Categorical (accelerated vs standard dosing)	Gibson (2015)[30]	RR: 0.11 (95% CI: [0.01–0.83], P=0.03)
Narcotics	Categorical (Y)	Lian (2010)[34]	OR: 1.4 (95% CI: [0.5–3.5], P=0.5)
Baseline steroids (intravenous)	Categorical (Y)	Con (2022)[8]	OR: 4.1 (95% CI: [1.4–11.6], P=0.009)
Baseline steroids (oral)	Categorical (Y vs N)	Patrick (2018)[18]	OR: 1.2 (95% CI: [0.65–2.19], P=0.555)
	Categorical (≥40 vs <20 mg/d)	Lee (2016)[25]	OR: 8.57 (95% CI: [1.01–72.64], P=0.049)
	Categorical (≥20 vs <20 mg/d)	Lee (2016)[25]	OR: 5.82 (95% CI: [0.63–53.25], P=0.119)
	Dichotomous (>20 mg)	Deiana (2016)[28]	OR: 0.92 (95% CI: [0.21–3.99], P=0.90)
	Dichotomous (>15 days)	Deiana (2016)[28]	OR: 4.74 (95% CI: [0.52–42.89], P=0.16)

Baseline topical therapy	Categorical (Y)	Ho (2004)[39]	OR: 0.57 (95% CI: [0.30–1.07], P=0.08)
Baseline total parenteral nutrition	Categorical (Y)	Ho (2004)[39]	OR: 12.5 (95% CI: [3.45–50.0], P=0.004)
Rescue therapy	Categorical (IFX vs cyclosporine)	Clark (2023)[4]	OR: 0.41 (95% CI: [0.11–1.53], P=0.27)
	Categorical (Y)	Clark (2023)[4]	OR: 2.41 (95% CI: [1.01–5.80], P=0.17)
Response to an initial IFX dose	Categorical (Response vs inadequate clinical response)	Clark (2023)[4]	OR: 0.34 (95% CI: [0.09–1.34], P=0.17)
Using cyclosporine as third-line salvage therapy	Categorical (Y)	García (2024)[2]	OR: 8.0 (95% CI: [1.3–48.5], P=0.004)
Demographic and other factors			
Age	Continuous (year)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 32 (26–45) vs 29 (24–54) (P=0.43)
	Continuous (year)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 43.2 (14.3) vs 43.2 (14.8) (P=0.997)
	Continuous (year)	Le Baut (2021)[12]	HR: 1.03 (95% CI: [1.01–1.05], P<0.01)

	Continuous (year)	Wu (2019)[16]	Median (range) (no colectomy vs colectomy): 43.0 (15.0–78.0) vs 40.0 (16.0–80.0) (P=0.906)
	Continuous (year)	Patrick (2018)[18]	Mean (SD) (no colectomy vs colectomy): 36.24 (16.56) vs 40.45 (16.17) (P=0.093)
	Continuous (year)	Jain (2018)[21]	Mean (SD) (no colectomy vs colectomy): 35.3 (11.8) vs 35.5 (12.1)
	Continuous (year)	Moskovitz (2006)[38]	Mean (no colectomy vs colectomy): 40 vs 47
	Dichotomous (>70 years)	Subhaharan [5](2023)	OR: 0.30 (95% CI: [0.07–1.32], P=0.11)
	Dichotomous (>40 years)	Deiana (2016)[28]	OR: 3.42 (95% CI: [1.15–10.1], P=0.02)
Age at diagnosis	Continuous (year)	Wu (2019)[16]	Median (range) (no colectomy vs colectomy): 40.0 (11.0–78.0) vs 38.0 (13.0–77.0), P=0.692
ASUC onset within 6 months after diagnosis	Categorical (Y)	Le Baut (2021)[12]	OR: 0.33 (95% CI: [0.11–0.98], P=0.05)
Body mass index	Continuous (kg/m^2)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 21.3 (3.2) vs 19.3 (3.1) (P<0.001)
	Categorical (< 18.5 kg/m^2)	Ge (2022)[10]	OR: 2.722 (95% CI: [0.720–10.286], P=0.140)

	Categorical (18.5–25 kg/m2)	Ge (2022)[10]	OR: 1.170 (95% CI: [0.342–4.001], P=0.802)
Disease duration	Continuous (year)	Clark (2023)[4]	Median (IQR) (no colectomy vs colectomy): 4.0 (0–9.0) vs 1.0 (0–3.3) (P=0.11)
	Continuous (month)	Ge (2022)[10]	Mean (SD) (no colectomy vs colectomy): 60.7 (68.1) vs 62.8 (58.3) (P=0.822)
	Continuous (year)	Le Baut (2021)[12]	HR: 0.99 (95% CI: [0.94–1.04], P=0.75)
	Continuous (year)	Patrick (2018)[18]	Median (IQR) (no colectomy vs colectomy): 2 (7.3) vs 1 (3.5) (P=0.108)
	Continuous (month)	Jain (2018)[21]	Median (range) (no colectomy vs colectomy): 19.5 (0–240) vs 13 (2–144)
	Continuous (year)	Lian (2010)[34]	OR: 1 (95% CI: [0.95–1.1], P=0.9)
	Continuous (day)	Moskovitz (2006)[38]	Mean (no colectomy vs colectomy): 1979 vs 2086
	Continuous (year)	Lindgren (1998)[40]	Mean (no colectomy vs colectomy): 8.1 vs 2.7 (P=0.0037)
First presentation of ASUC	Categorical (Y)	Ho (2004)[39]	OR: 0.82 (95% CI: [0.44–1.53], P=0.64)
Metropolitan	Categorical (Y)	Clark (2023)[4]	OR: 0.49 (95% CI: [0.21–1.15])

Previous admissions (requiring intravenous corticosteroids)	Categorical (Y)	Ho (2004)[39]	OR: 1.28 (95% CI: [0.63–2.60], P=0.59)
Previous appendectomy	Categorical (Y)	Le Baut (2021)[12]	OR: 2.85 (95% CI: [0.73–11.18], P=0.14)
Previous intestinal surgery	Categorical (Y)	Con (2022)[8]	OR: 0.8 (95% CI: [0.0–16.4], P=0.86)
Time of flare-up before admission	Continuous (months)	Le Baut (2021)[12]	HR: 1.00 (95% CI: [0.99–1.00], P=0.55)
Colectomy at any time during follow–up (>one year)			
Biomarkers			
Albumin	Continuous (g/L)	Xie (2018)[23]	OR: 0.96 (95% CI: [0.88–1.05], P=0.419)
	Continuous (g/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 34.5 (3.1) vs 34.0 (5.1) (P=0.96)
	Dichotomous (≤22 g/l)	Beswick (2018)[20]	OR: 0.5 (95% CI: [0.1–3.3], P=0.5)
α1–antitrypsin	Continuous (g/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 2.2 (0.5) vs 2.3 (0.6)

			(P=0.73)
Antisecretory factor	Continuous (absorbance 405 nm)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 0.5 (0.3) vs 0.7 (0.4) (P=0.31)
Complement factor 3c	Continuous (absorbance 405 nm)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 1.1 (0.2) vs 1.5 (0.2) (P=0.01)
C-reactive protein	Continuous (mg/L)	Xie (2018)[23]	OR: 1.00 (95% CI: [0.98–1.03], P=0.726)
	Continuous (mg/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 30.2 (23.0) vs 67.7 (57) (P=0.19)
	Dichotomous (≥30 mg/l)	Beswick (2018)[20]	OR: 3.1 (95% CI: [0.5–22.0], P=0.2)
	Dichotomous (≥3 mg/dl)	Monterubbianesi (2014)[32]	RR 2.15 (95% CI: [1.05–4.36], P=0.003)
C-reactive protein /albumin ratio	Dichotomous (≥1.6)	Beswick (2018)[20]	OR: 0.5 (95% CI: [0.1–3.3], P=0.5)
Erythrocyte sedimentation rate	Continuous (mm/h)	Xie (2018)[23]	Mean (SD) (no colectomy vs colectomy): 33.4 (20.4) vs 32.3 (20.9) (P=0.854)
	Continuous (mm/h)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 20.5 (6.4) vs 37.9 (22.7) (P=0.09)
	Continuous (mm/h)	Chew (1991)[42]	Median (range) (no colectomy vs colectomy): 23 (2–110) vs 51 (5–

			140) (P<0.05)
Fecal calprotectin	Dichotomous (AUC <11000 μg/ml)	Beswick (2018)[20]	OR: 0.2 (95% CI: [0.02–0.8], P=0.02)
Fecal IFX level	Dichotomous (>1 mg/ml)	Beswick (2018)[20]	OR: 176 (95% CI: [2.1–14452], P=0.01)
Haptoglobin	Continuous (g/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 2.8 (0.6) vs 2.6 (1.0) (P=0.71)
Hematocrit	Dichotomous (<36%)	Molnár (2011)[33]	OR: 2.21 (95% CI: [1.32–3.71], P=0.002)
Hemoglobin	Continuous (g/L)	Xie (2018)[23]	Mean (SD) (no colectomy vs colectomy): 106.4 (24.5) vs 98.0 (21.4) (P=0.166)
	Continuous (g/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 135.7 (9.3) vs 126.0 (18.1) (P=0.34)
	Dichotomous (<100g/L)	Al-Darmaki (2017)[24]	OR: 0.54 (95% CI: [0.29–1.02])
IL–1β	Continuous (pg/ml)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 3.7 (1.4) vs 4.7 (3.5) (P=0.48)
IL–6	Continuous (pg/ml)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 5.6 (6.7) vs 6.2 (7.0) (P=0.87)
IL–8	Continuous (pg/ml)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 23.9 (19.7) vs 17.9 (22.8)

			(P=0.67)
IL–10	Continuous (pg/ml)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 8.0 (2.8) vs 9.0 (9.5) (P=0.77)
Leukocytes	Continuous (10^9/L)	Xie (2018)[23]	Mean (SD) (no colectomy vs colectomy): 8.94 (6.05) vs 10.51 (7.37) (P=0.264)
Orosomucoid	Continuous (g/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 1.6 (0.3) vs 1.8 (0.4) (P=0.41)
Potassium	Continuous (mmol/l)	Chew (1991)[42]	Mean (SD) (no colectomy vs colectomy): 3.74 (0.42) vs 3.9 (0.47)
Platelet	Continuous (/mm^3)	Xie (2018)[23]	OR: 1.01 (95% CI: [0.99–1.01], P=0.114)
	Continuous (10^9/L)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 389.6 (103.1) vs 496.7 (184.8) (P=0.32)
Serum IFX level	Dichotomous (AUC <216 mg/ml)	Beswick (2018)[20]	OR: 0.03 (95% CI: [0.02–0.4], P<0.01)
TNF–α	Continuous (pg/ml)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 9.1 (4.4) vs 6.9 (3.8) (P=0.45)
Other auxiliary examination results			
Fecal weight	Continuous (g/24h)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 277.1 (136.9) vs 559.1 (390.7) (P=0.12)
Mayo endoscopic	Continuous	Xie (2018)[23]	OR: 0.45 (95% CI: [0.08–2.59], P=0.372)

subscore	Dichotomous (≥3)	Beswick (2018)[20]	OR: 1.9 (95% CI: [0.2–20.8], P=0.6)
Partial Mayo score	Dichotomous (AUC <20)	Beswick (2018)[20]	OR: 0.01 (95% CI: [0.001–0.08], P<0.01)
Pulse	Continuous (per minute)	Xie (2018)[23]	Mean (SD) (no colectomy vs colectomy): 81.6 (16.5) vs 83.0 (10.7) (P= 0.601)
Severe endoscopic lesions	Categorical (Y)	Monterubbianesi (2014)[32]	RR 5.13 (95% CI: [1.55–16.96], P=0.007)
Small bowel distension	Categorical (Y)	Chew (1991)[42]	OR: 3.55 (95% CI: [2.27–5.87], P<0.05)
Temperature	Continuous (°C)	Xie (2018)[23]	Mean (SD) (no colectomy vs colectomy): 36.9 (0.7) vs 37.1 (0.6) (P= 0.422)
Previous drug exposure			
Aminosalicylate	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 1.29 (95% CI: [0.75–2.22])
Azathioprine	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 2.95 (95% CI: [1.42–6.09])
IFX	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 5.12 (95% CI: [1.36–19.30])

Intravenous steroid	Dichotomous (≥5 days pre-admission)	Beswick (2018)[20]	OR: 3.5 (95% CI: [0.5–24.6], P=0.2)
Immunomodulator	Categorical (Y)	Corte (2015)[29]	OR: 3.0 (95% CI: [0.62–14.5], P=0.17)
Prednisone	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 5.44 (95% CI: [3.03–9.75])
Baseline concomitant medications			
Blood transfusion	Categorical (Y)	Molnár (2011)[33]	OR: 3.12 (95% CI: [1.6–6.07], P=0.001)
IFX	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 0.28 (95% CI: [0.10–0.77])
Immunomodulator	Dichotomous (Concurrent & ≥3 months pre-admission)	Beswick (2018)[20]	OR: 0.3 (95% CI: [0.03–3.3], P=0.3)
Demographic and other factors			
Age	Continuous (year)	Chew (1991)[42]	Mean (SD) (no colectomy vs colectomy): 42.4 (16.8) vs 42.8 (18)
	Dichotomous (>60 years)	Zhang (2023)[6]	OR: 2.86 (95% CI: [1.21–6.77], P=0.02)
Body mass index	Dichotomous (>30 kg/m^2)	Beswick (2018)[20]	OR: 0.5 (95% CI: [0.1–3.4], P=0.5)
	Dichotomous (<20 kg/m^2)	Molnár (2011)[33]	OR: 1.48 (95% CI: [0.17–2.8], P=0.027)
Bowel movements	Continuous (times/d)	Pagoldh (2014)[31]	Mean (95%CI) (no colectomy vs colectomy): 4.3 (3.5) vs 15.3 (8.5)

			(P=0.01)
City	Categorical (non–Calgary Health Zone vs Calgary Health Zone)	Al-Darmaki (2017)[24]	OR: 2.81 (95% CI: [1.49–5.29])
CMV infection	Categorical (Y)	Huang (2024)[3]	OR: 1.63 (95% CI: [0.71–3.71], P=0.27)
Comorbidity	Categorical (Y)	Xie (2018)[23]	Proportion (no colectomy vs colectomy): 16.4% vs 18.9% (P=0.751)
	Categorical (Y)	Al-Darmaki (2017)[24]	OR: 1.52 (95% CI: [0.93–2.50])
Duration of disease	Continuous (month)	Xie (2018)[23]	Median (range) (no colectomy vs colectomy): 22 (1–296.00) vs 24 (1–276) (P=0.428)
	Continuous (year)	Chew (1991)[42]	Mean (SD) (no colectomy vs colectomy): 7 (8.5) vs 8.9 (8.9)
	Dichotomous (≥3 years)	Beswick (2018)[20]	OR: 0.4 (95% CI: [0.1–2.7], P=0.3)
Duration of flare	Categorical (2–8 vs < 2 weeks)	Al-Darmaki (2017)[24]	OR: 0.65 (95% CI: [0.33–1.29])
	Categorical (>8 vs < 2 weeks)	Al-Darmaki (2017)[24]	OR: 0.70 (95% CI: [0.34–1.43])
	Categorical (undetermined vs < 2	Al-Darmaki (2017)[24]	OR: 1.63 (95% CI: [0.37–7.20])

	weeks)		
History of adverse events	Categorical (Y)	Kobayashi (2010)[35]	OR: 14.4 (95% CI: [1.57–132.31], P<0.01)
New diagnosis	Categorical (Y)	Corte (2015)[29]	OR: 0.4 (95% CI: [0.04–4.0], P=0.43)
Number of additional Truelove and Witts criteria	Ordinal	Corte (2015)[29]	OR: 1.4 (95% CI: [0.64–2.9], P=0.43)
Race	Categorical (Asian vs White)	Allison (2008)[37]	OR: 0.53 (95% CI: [0.17–1.69], P=0.28)
	Categorical (Black vs White)	Allison (2008)[37]	OR: 1.13 (95% CI: [0.48–2.64], P=0.78)
	Categorical (Hispanic vs White)	Allison (2008)[37]	OR: 0.79 (95% CI: [0.39–1.59], P=0.51)
	Categorical (Others vs White)	Allison (2008)[37]	OR: 0.39 (95% CI: [0.05–2.79], P=0.35)
Smoking	Categorical (current/ex-smoker)	Beswick (2018)[20]	OR: 0.3 (95% CI: [0.02–2.6], P=0.2)
	Categorical (current smoker)	Al-Darmaki (2017)[24]	OR: 0.72 (95% CI: [0.29–1.76])

	Categorical (ex-smoker)	Al-Darmaki (2017)[24]	OR: 1.14 (95% CI: [0.65–1.98])
Steroid-refractory	Categorical (Y)	Molnár (2011)[33]	OR: 3.69 (95% CI: [1.69–8.11], P=0.001)

ASUC, acute severe ulcerative colitis; AUC, area under the receiver operator characteristic curve; CI, confidence interval; IFX, infliximab; IL, interleukin; IQR, interquartile range; OR, odds ratio; RR, relative risk; SD, standard deviation.

Supplementary Figure

Figure S1. Flow chart of study selection

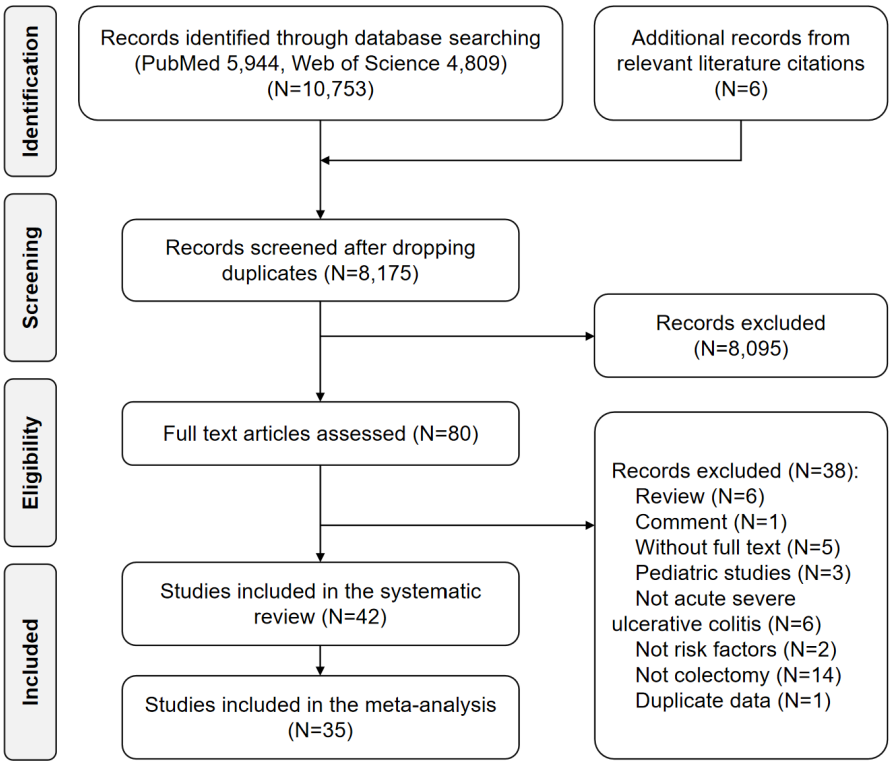


Figure S2. The pooled rates of colectomy

(A) Within 90 days; (B) 90 days to 1 year; (C) More than 1 year. Abbreviations: OR, odds ratio; CI: confidence interval.

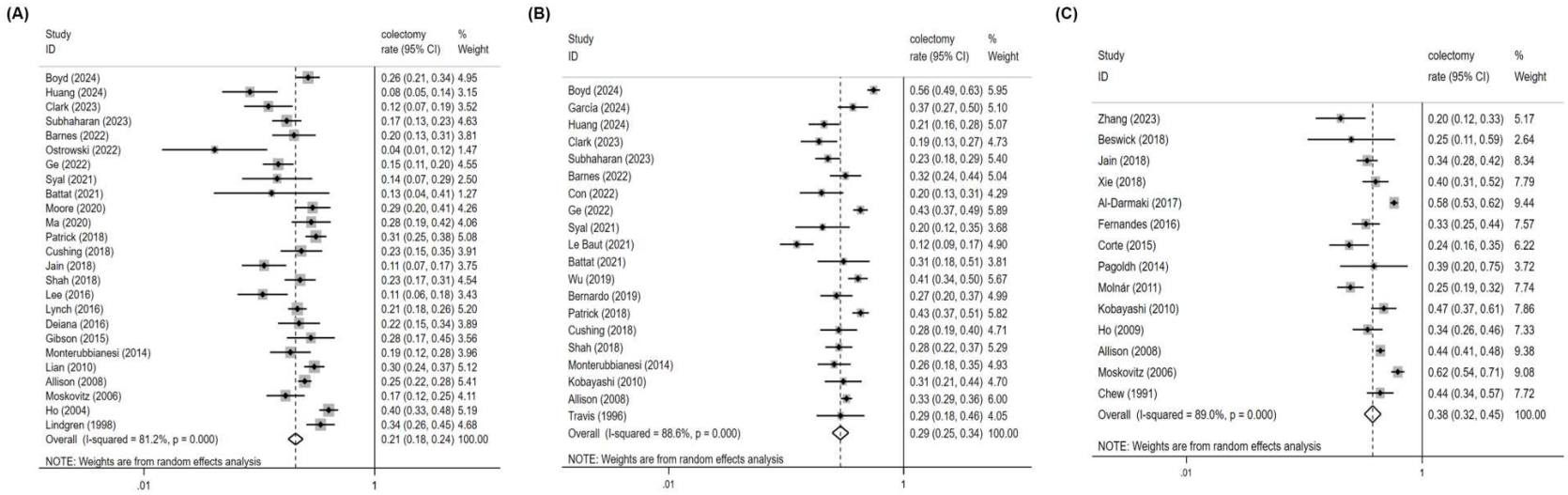
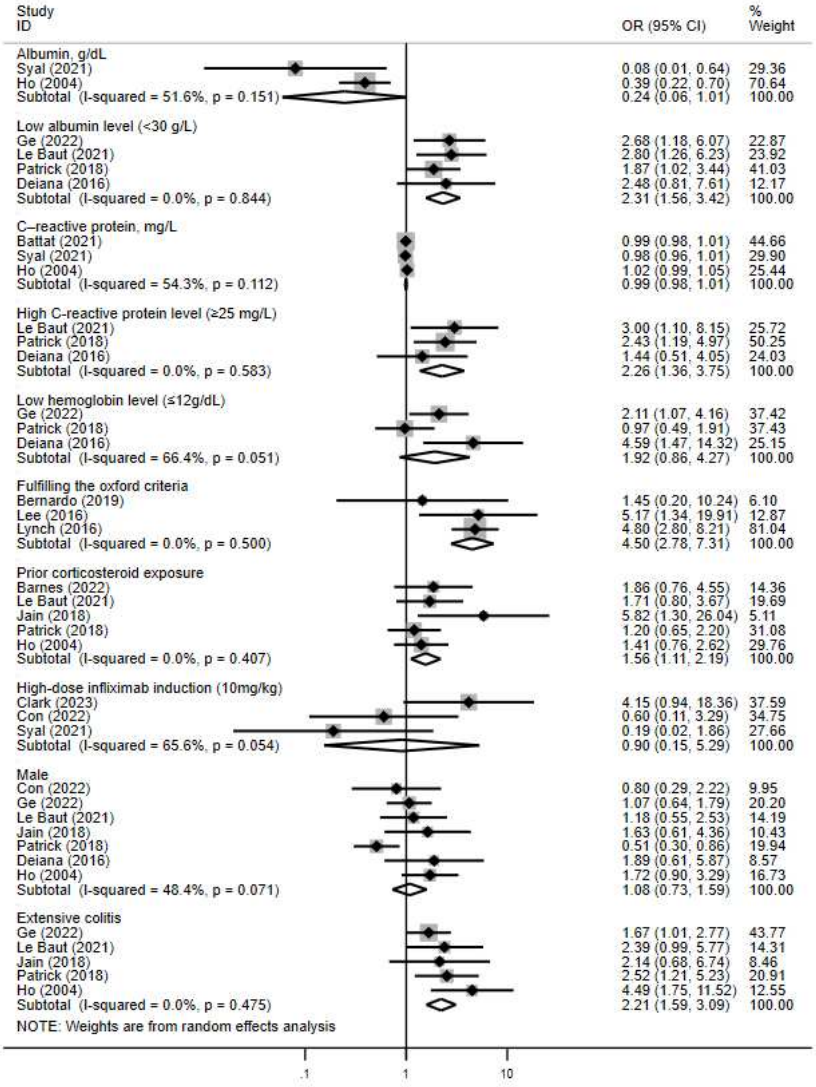


Figure S3. Sensitivity analysis for patients diagnosed with ASUC by Truelove and Witt's criteria

Abbreviations: OR, odds ratio; CI: confidence interval.



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