

TABLE 1. Characteristics of studies reporting association of the neutrophil-to-lymphocyte ratio and postsurgical complications.										
Study (Author, Year, Country)	Type of study	Participants (N)	Tumour stage	Tumour position	Surgery type	Measured NLR (Preoperative/postoperative)	NLR cut-off	Postsurgical complications	Association of NLR and postsurgical complication	p-value
Alsaif et.al., 2021, Ireland [12]	Retrospective cohort	198	Stage II and III	Left colon (non-rectal): 41.3% Right colon: 36.2% Rectum: 22.5%	Laparoscopic: 80% Laparotomic: 20%	Preoperative	NLR>3.92	Ileus, Infection, Anastomotic leakage and Cardiac events	Odds ratio Ileus: 1.5 Infection: 2.4 Anastomotic leakage: 4.8 Cardiac events: 1.8	Ileus: 0.52 Infection:0.17 Anastomotic leakage: 0.05 Cardiac events: 0.20
Caputo et.al., 2016, Italy [13]	Retrospective cohort	87	Stage II and III	Rectum	Laparoscopic:87.4% Laparotomic: 8.1% Robotic:4.5%	Preoperative after neoadjuvant therapy	NLR≥3.8	Not mentioned	Positive association- chi-squared test performed	0.03
Cooper et.al., 2021, United Kingdom [14]	Retrospective cohort	131	Unknown	Unknown	Unknown	Preoperative	Mean cut-off: NLR>5.4	Infection	Positive association- Mann-Whitney U test performed	0.026
De Leon et.al., 2019, Mexico [15]	Cross-sectional cohort	54	Stage II, III and IV	Rectum	Unknown	Preoperative	Not mentioned	Not mentioned	Positive association	0.02
Egan et.al.,2015, United Kingdom [16]	Case-control	Complications: 54 Controls: 161 Total:215	Unknown	Unknown	Unknown	Preoperative and postoperative	Not mentioned	Infection: 68.5% Anastomotic leakage: 31.5%	Ratio-of means (complication vs controls) Preoperative: 1.5 Postoperative:1.2	Preoperative: 0.0002 Postoperative: 0.065
Escobar et.al.,2022, Mexico [17]	Prospective cohort	158	Stage II: 22.6% Stage III: 44.3% Stage IV: 33.1%	Left colon (non-rectal): 26.3% Right colon: 25.4% Rectum: 48.3%	Laparoscopic: 16.2% Laparotomic: 83.8%	Preoperative	NLR≥2.6	Infection and anastomotic leakage	Odds ratio: 2.24	0.02
Fuss et.al.,2022, Ukraine [18]	Retrospective cohort	234	T1/T2: 34.2% T3/T4: 65.8%	Left colon (non-rectal): 32.5% Right colon: 65.8% Rectum: 1.7%	Laparoscopic: 87.5% Laparotomic: 12.5%	Preoperative	NLR≥3	Infection and anastomotic leakage	Positive association	0.04
Gallarin et.al.,2017, Spain [19]	Retrospective cohort	292	Stage I, II and III	Unknown	Unknown	Preoperative	NLR≥5	Anastomotic leakage	Odds ratio: 1.9	<0.05
Gohil et.al., 2013, United Kingdom [20]	Retrospective cohort	196	Unknown	Unknown	Unknown	Preoperative	Not mentioned	Anastomotic leakage	No association	
Hu et.al.,2023, Canada [21]	Retrospective cohort	534	N0 stage: 57% Lymph node spread: 43%	Unknown	Laparoscopic: 27% Laparotomic: 73%	Preoperative	Not mentioned	Not mentioned	No association	-
Jones et.al., 2018, United Kingdom [22]	Prospective cohort	314	T1/T2: 34% T3/T4: 66%	Rectum	Unknown	Preoperative and postoperative	NLR>4	Anastomotic leakage, Infection, Pelvic collection and Flap necrosis	Positive association	<0.01
Josse et.al.,2016, Canada [23]	Retrospective cohort	583	Stage I or in-situ: 37% Stage II: 31% Stage III: 26% Stage IV: 6%	Colon: 62% Rectum: 38%	Laparoscopic: 48% Laparotomic: 52%	Preoperative	NLR≥2.3	Infection:41% Gastric and urinary:16.4% Cardiac events: 16.4% Anastomotic leakage:12.9% Bleeding: 12.8%	Odds ratio: 2.52	0.009
Kim et.al., South Korea [24]	Retrospective cohort	405	Unknown	Rectum	Unknown	Postoperative (day 5)	NLR≥8	Anastomotic leakage	Odds ratio: 2.997	<0.001
Kumar et.al., India [25]	Prospective cohort	17	Unknown	Unknown	Unknown	Postoperative (day 3)	Not mentioned	Anastomotic leakage	Positive association	<0.05
Matsuda et.al.,2014, Japan [26]	Retrospective cohort	364	Unknown	Unknown	Laparoscopic	Change in NLR (Postoperative day 1 -preoperative)		Infection	Odds ratio: 1.20	0.031
Melliti et.al.,2021, Tunisia [27]	Retrospective cohort	55	Unknown	Left colon (non-rectal): 22% Right colon: 43% Rectum: 35%	Unknown	Preoperative	NLR≥5	Infection: 48% Anastomotic leakage: 26% Abdominal collection:17% Bleeding:4.5% Ileus:4.5%	Positive association	0.01
Mik et.al, 2018, Poland [28]	Prospective cohort	724	Stage I: 17.7% Stage II: 35.4% Stage III: 36.3% Stage IV: 10.6%	Left colon (non-rectal): 31.9% Right colon: 26% Rectum: 42.1%	Laparotomic	Postoperative (day 4)	NLR≥6.5	Anastomotic leakage	Positive association	0.0012
Mikayata et.al, 2016, Japan [29]	Retrospective cohort	261	Stage II and III	Rectum	Unknown	Preoperative	Not mentioned	Anastomotic leakage, Infection, and Bowel obstruction	Odds ratio Infection: 4 Anastomotic leakage: 8.66 Bowel obstruction: 3.86	Infection: 0.004 Anastomotic leakage: <0.001 Bowel obstruction: 0.007
Mikayata et.al, 2017, Japan [30]	Retrospective cohort	260	In-situ: 11% Stage I: 30% Stage II: 31% Stage III: 28%	Rectum	Unknown	Preoperative	NLR≥2.21	Anastomotic leakage, Infection, and Bowel obstruction	Odds ratio Infection: 3.65 Anastomotic leakage: 4.51 Bowel obstruction: 2.06	Infection: 0.0138 Anastomotic leakage: 0.0329 Bowel obstruction: 0.1842
Mohri et.al., 2014, Japan [31]	Retrospective cohort	186	Unknown	Unknown	Unknown	Preoperative	NLR>3	Infection	Positive association	<0.05
Morimoto et.al.,2021, Japan [32]	Retrospective cohort	208	T1/T2: 27.8% T3/T4: 72.1%	Colon: 86.1% Rectum: 13.9%	Laparoscopic: 60% Laparotomic: 40%	Preoperative	NLR≥2.7	Anastomotic leakage	Positive association	<0.05
Nakao et.al., 2016, Japan [33]	Retrospective cohort	76	Unknown	Unknown	Laparoscopic	Preoperative	NLR≥3.2	Not mentioned	No association	-
Paliogiannis et.al., 2020, Italy [34]	Retrospective cohort	1432	In-situ: 0.9% Stage I: 16.9% Stage II: 32.8% Stage III: 36.7% Stage IV: 11.7% Unknown: 1%	Left colon (non-rectal): 34% Right colon: 38.4% Rectum: 27.6%	Laparoscopic: 26% Laparotomic: 74%	Postoperative (day 4)	NLR≥6.5	Anastomotic leakage	Odds ratio: 1.068	0.004
Pantoja-Pachajoa et.al., 2021, Argentina [35]	Retrospective cohort	116	Stage I: 23.3% Stage II: 60.3% Stage III: 15.5% Stage IV: 0.9%	Left colon (non-rectal): 53% Right colon: 31% Rectum: 16%	Laparoscopic: 44% Laparotomic: 56%	Postoperative (day 1-5)	Not mentioned	Anastomotic leakage	No association	-
Sagawa et.al., 2017, Japan [36]	Retrospective cohort	351	Unknown	Colon: 70.7% Rectum: 29.3%	Laparoscopic: 18.8% Laparotomic: 81.2%	Preoperative	NLR>4	Infection	Odds ratio: 3.24	0.01
Tan et.al.,2022, China [37]	Retrospective cohort	306	Stage I, II, III	Rectal	Laparotomic	Preoperative	NLR>6.54	Anastomotic leakage	Positive association	< 0.001
Viela et.al.,2019, Spain [38]	Prospective cohort	221	Unknown	Rectal	Unknown	Preoperative	NLR>5	Anastomotic leakage	Positive association	0.001
Yalav et.al., 2020, Turkey [39]	Retrospective cohort	279	Stage I, II and III	Colon	Laparotomic: 93.5% Laparoscopic: 6.5%	Preoperative	NLR>2.08	Infection, Internal abscess, Evisceration, Ileus, Anastomotic leakage	-	Infection: 0.456 Internal abscess: 0.034 Evisceration: 0.574 Ileus: 0.05 Anastomotic Leakage: 0.426
Yano et.al.,2017, Japan [40]	Retrospective cohort	188	Unknown	Colon: 62.7% Rectum: 37.3%	Unknown	Preoperative	NLR>3	Infection, Ileus, Bleeding	Positive association	<0.05
Yuliandar et.al., 2020, Indonesia [41]	Cross-sectional cohort	54	Unknown	Sigmoid colon	Laparotomic	Preoperative	NLR>6.06	Anastomotic leakage	No association	0.518
Zeman et.al., 2020, Poland [42]	Retrospective cohort	392	Stage III	Sigmoid colon	Laparotomic	Preoperative	NLR>5	Anastomotic leakage	OR= 2.98	0.033
Zhang et.al., 2022, Germany [43]	Prospective cohort	204	Stage II and III	Colon	Unknown	Postoperative	NLR>4.95	Anastomotic leakage	Positive association	0.001