Figure S1. Study flow chart.

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                    ┌─────────────────────────────────────┐
                    │           PDAC patients             │
                    │        N = 2,323 patients           │
                    │         at initial diagnosis        │
                    │ (Charité Universitätsmedizin Berlin)│
                    └─────────────────────────────────────┘
                                      │
                                      │        ┌──────────────────────────┐
                                      │───────▶│    Excluded patients     │
                                      │        │       N = 1,029          │
                                      │        │ no sufficient data or    │
                                      │        │    multiple              │
                                      │        │    types of cancer       │
                                      │        └──────────────────────────┘
                                      ▼
                    ┌─────────────────────────────────────┐
                    │           PDAC patients             │
                    │             N= 1,294                │
                    │ with sufficient criteria and        │
                    │    differential                     │
                    │ blood count prior intervention      │
                    └─────────────────────────────────────┘
                                      │
           ┌──────────────────────────┼──────────────────────────┐
           ▼                          ▼                          ▼
  ┌──────────────────┐    ┌──────────────────────┐    ┌──────────────────────┐
  │  Resected PDAC   │    │  Non-resected/non-   │    │  Metastasized PDAC   │
  │     N= 537       │    │  metastasized PDAC   │    │      N = 623         │
  │                  │    │     N = 134          │    │                      │
  └──────────────────┘    └──────────────────────┘    └──────────────────────┘
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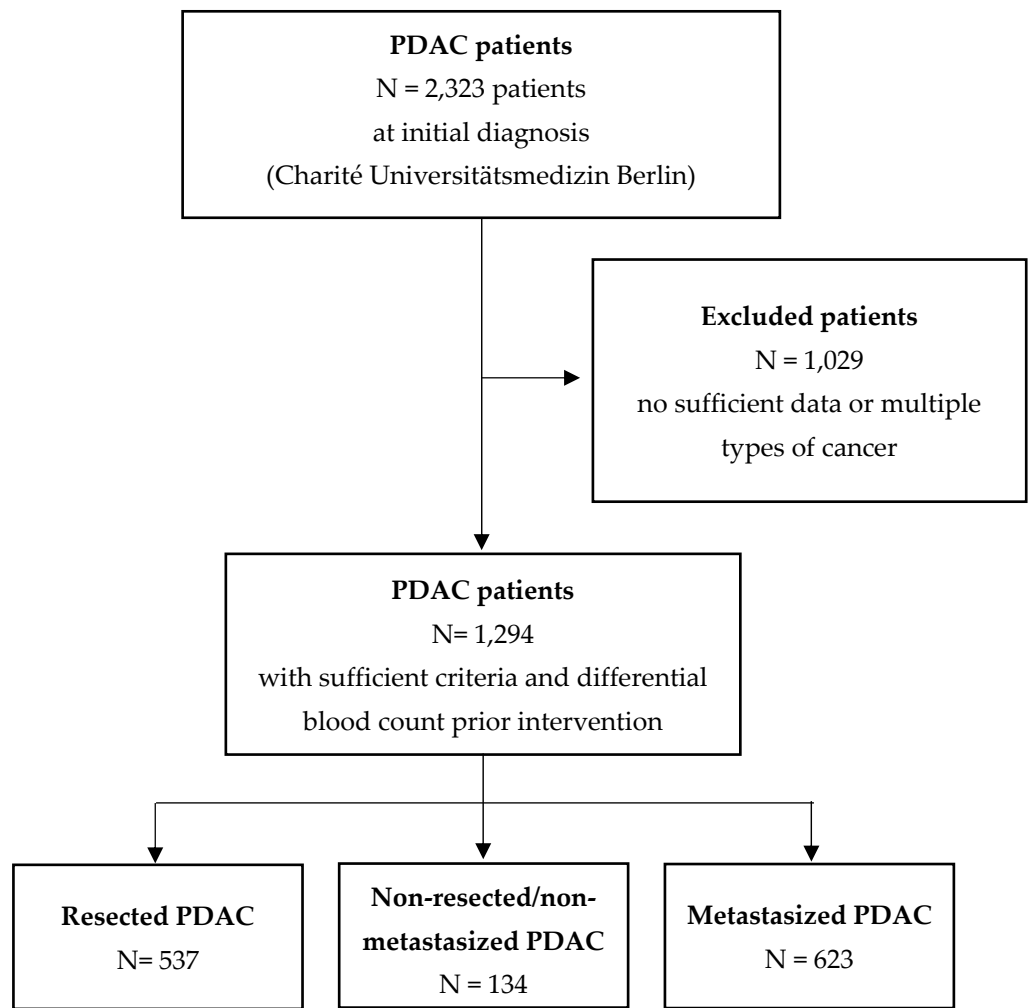
PDAC – pancreatic adenocarcinoma.

Table S1. Descriptive statistics of study cohort with respect to NLR.

Factor	Overall N = 1,294	NLR < 4 N = 581	NLR ≥ 4 N = 713
Age (years)	66 (28– 94)	64 (28 – 87)	69 (34 – 94)
Sex			
Female	576 (44.5)	285 (22.0)	291 (22.5)
Male	718 (55.5)	298 (23.0)	420 (32.5)
ECOG			
≥ 2	192 (14.8)	83 (6.4)	109 (8.4)
< 2	616 (47.6)	296 (22.9)	320 (24.7)
Unknown	486 (37.6)	202 (15.6)	284 (22.0)
Stage			
Resected	537 (41.5)	228 (17.6)	309 (23.9)
Locally advanced	134 (10.5)	76 (6.0)	58 (4.5)
Metastasized	623 (48.0)	277 (21.3)	346 (26.7)
Localization			
Head	675 (52.2)	301 (23.2)	374 (29.0)
Body	125 (9.7)	69 (5.2)	56 (4.5)
Tail	208 (16.1)	85 (6.6)	123 (9.5)
Overlap	63 (4.9)	26 (2.0)	37 (2.9)
Not-specified	223 (17.1)	100 (7.6)	123 (9.5)
Treatment			
Resection			
R0	347 (26.7)	147 (11.2)	200 (15.5)
R1	147 (11.5)	63 (5.0)	84 (6.5)
R2	4 (0.3)	1 (0.1)	3 (0.2)
RX	5 (0.4)	3 (0.2)	2 (0.2)
Unknown	34 (2.6)	28 (2.2)	6 (0.4)
Palliative Treatment	757 (58.5)	339 (26.2)	418 (23.3)

NLR – neutrophile to lymphocyte ratio.

Table S2. Descriptive statistics of study cohort with respect to PLR.

Factor	Overall N = 1,294	PLR < 180 N = 590	PLR ≥ 180 N = 704
Age (years)	66 (28– 94)	66 (28 – 87)	68 (34 – 94)
Sex			
Female	576 (44.5)	274 (21.1)	302 (23.3)
Male	718 (55.5)	316 (24.4)	402 (31.2)
ECOG			
≥ 2	192 (14.8)	76 (5.8)	116 (9.0)
< 2	616 (47.6)	294 (22.7)	322 (24.9)
Unknown	486 (37.6)	220 (17.1)	266 (20.5)
Stage			
Resected	537 (41.5)	235 (18.2)	302 (23.3)
Locally advanced	134 (10.5)	66 (5.1)	68 (5.4)
Metastasized	623 (48.0)	289 (22.3)	334 (25.7)
Localization			
Head	675 (52.2)	277 (21.4)	398 (30.8)
Body	125 (9.7)	79 (6.1)	46 (3.6)
Tail	208 (16.1)	100 (7.7)	108 (8.4)
Overlap	63 (4.9)	30 (2.3)	33 (2.5)
Not-specified	223 (17.1)	104 (8.0)	119 (9.1)
Treatment			
Resection			
R0	347 (26.7)	157 (12.1)	190 (14.6)
R1	147 (11.5)	62 (4.8)	85 (6.7)
R2	4 (0.3)	1 (0.1)	3 (0.2)
RX	5 (0.4)	3 (0.2)	2 (0.2)
Unknown	34 (2.6)	28 (2.2)	6 (0.4)
Palliative Treatment	757 (58.5)	339 (26.2)	418 (23.3)

PLR – platelet to lymphocyte ratio.

Table S3. Descriptive statistics of study cohort with respect to LMR.

Factor	Overall N = 1,294	LMR < 1.6 N = 491	LMR ≥ 1.6 N = 803
Age (years)	66 (28– 94)	68 (34 – 94)	66 (28 – 87)
Sex			
Female	576 (44.5)	181 (14.0)	394 (30.5)
Male	718 (55.5)	308 (23.8)	410 (31.7)
ECOG			
≥ 2	192 (14.8)	83 (6.4)	109 (8.4)
< 2	616 (47.6)	218 (16.9)	398 (30.7)
Unknown	486 (37.6)	222 (17.1)	264 (20.5)
Stage			
Resected	537 (41.5)	209 (16.1)	328 (25.4)
Locally advanced	134 (10.5)	32 (2.4)	102 (8.0)
Metastasized	623 (48.1)	250 (19.2)	373 (28.9)
Localization			
Head	675 (52.2)	268 (20.7)	407 (31.5)
Body	125 (9.7)	44 (3.4)	81 (6.2)
Tail	208 (16.1)	70 (5.4)	138 (10.7)
Overlap	63 (4.9)	25 (1.9)	38 (3.0)
Not-specified	223 (17.2)	84 (6.5)	139 (10.7)
Treatment			
Resection			
R0	347 (26.7)	129 (9.9)	218 (16.8)
R1	147 (11.5)	61 (4.7)	86 (6.8)
R2	4 (0.3)	2 (0.15)	2 (0.15)
RX	5 (0.4)	1 (0.08)	4 (0.32)
Unknown	34 (2.6)	16 (1.2)	18 (1.4)
Palliative Treatment	757 (58.5)	282 (21.8)	475 (36.7)

LMR – lymphocyte to monocyte ratio.

Table S4. Descriptive statistics of study cohort with respect to CAR.

Factor	Overall N = 1,197 [1]	CAR < 0.4 N = 561	CAR ≥ 0.4 N = 636
Age (years)	66 (28– 94)	66 (28 – 88)	67 (35 – 94)
Sex			
Female	530 (44.3)	277 (23.1)	253 (21.2)
Male	667 (55.7)	284 (23.7)	383 (32.0)
ECOG			
≥ 2	181 (15.1)	54 (4.5)	127 (12.3)
< 2	568 (47.5)	282 (23.6)	286 (23.9)
Unknown	448 (37.4)	225 (18.8)	223 (18.7)
Stage			
Resected	515 (43.0)	285 (23.8)	230 (19.2)
Locally advanced	123 (10.3)	73 (6.1)	50 (4.2)
Metastasized	559 (46.7)	203 (17.0)	356 (29.8)
Localization			
Head	632 (52.8)	312 (26.1)	320 (26.8)
Body	112 (9.4)	63 (5.3)	49 (4.1)
Tail	192 (16.1)	72 (6.0)	120 (10.0)
Overlap	58 (4.9)	27 (2.3)	31 (2.6)
Not-specified	203 (17.0)	87 (7.3)	116 (9.7)
Treatment			
Resection			
R0	337 (28.1)	189 (15.8)	148 (12.3)
R1	141 (11.8)	78 (6.5)	63 (5.3)
R2	3 (0.3)	2 (0.2)	1 (0.1)
RX	5 (0.4)	3 (0.3)	2 (0.2)
Unknown	29 (2.4)	13 (1.1)	16 (1.3)
Palliative Treatment	682 (57.0)	276 (23.1)	406 (34.0)

CAR – CRP to albumin ratio; CRP – C-reactive protein; [1] in the case of 97 out of 1,294 patients no CRP value was recorded.

Table S5. Descriptive statistics of study cohort with respect to IBI.

Factor	Overall N = 1,241[1]	IBI < 30 N = 689	IBI ≥ 30 N = 552
Age (years)	66 (28– 94)	67 (35 – 94)	65 (28 – 87)
Sex			
Female	550 (44.3)	282 (22.7)	268 (21.6)
Male	691 (55.7)	407 (32.8)	284 (22.9)
ECOG			
≥ 2	187 (15.1)	130 (10.5)	57 (4.6)
< 2	586 (47.2)	321 (25.9)	265 (21.3)
Unknown	468 (37.7)	238 (19.2)	230 (18.5)
Stage			
Resected	520 (41.9)	239 (19.3)	281 (22.6)
Locally advanced	129 (10.4)	60 (4.8)	69 (5.6)
Metastasized	592 (47.7)	390 (31.4)	202 (16.3)
Localization			
Head	652 (52.5)	338 (27.2)	314 (25.3)
Body	115 (9.3)	54 (4.4)	61 (4.9)
Tail	199 (16.0)	130 (10.5)	69 (5.5)
Overlap	59 (4.8)	31 (2.5)	28 (2.3)
Not-specified	216 (17.4)	136 (10.9)	80 (6.5)
Treatment			
Resection			
R0	291 (23.4)	143 (11.5)	148 (11.9)
R1	135 (10.9)	64 (5.2)	71 (5.7)
R2	2 (0.2)	0 (0.0)	2 (0.2)
RX	13 (1.0)	9 (0.7)	4 (0.3)
Unknown	43 (3.5)	20 (1.6)	23 (1.9)
Palliative Treatment	757 (61.0)	453 (36.5)	304 (24.5)

IBI – Inflammatory Benchmark-Index. [1] in the case of 53 out of 1,294 patients no IBI value was recorded.

Table S6. Different combined scores using inflammation-based parameters.

Score	Ratios
IBI	$\dfrac{L + M + N + P}{CRP}$
A	$L + M + N + P$
B	$\dfrac{L + M + N}{P}$
C	$\dfrac{L + N + P}{M}$
D	$\dfrac{L + M + P}{N}$
E	$\dfrac{M + N + P}{L}$
F	$\dfrac{L + M}{N + P}$
G	$\dfrac{L + N}{M + P}$
H	$\dfrac{L + P}{M + N}$
I	$L + M + N$
J	$\dfrac{L + M}{N}$
K	$\dfrac{L + N}{M}$
L	$\dfrac{M + N}{L}$
M	$L + M + P$
N	$\dfrac{L + M}{P}$
O	$\dfrac{L + P}{N}$
P	$\dfrac{M + P}{N}$
Q	$L + N + P$
R	$\dfrac{L + N}{P}$
S	$\dfrac{L + P}{N}$
T	$\dfrac{N + P}{L}$
U	$M + N + P$
V	$\dfrac{M + N}{P}$
W	$\dfrac{M + P}{N}$
X	$\dfrac{N + P}{M}$

IBI – Inflammation-Benchmark-Index; L – Lymphocytes (/nl); M – Monocytes (/nl); N – neutrophiles (/nl); P – Platelets (/nl); CRP – C-reactive protein (mg/dl).

Table S7. Univariate and multivariate logistic regression analyses of combined scores.

| Score	Cut-off	mOS (months) < Cut-off	mOS (months) ≥ Cut-off	Univariate analysis			Multivariate analysis		
				HR	95% CI	P-value	HR	95% CI	P-value
IBI	30	7	16	0.6	0.5 – 0.65	< 0.001	0.7	0.6 – 0.8	< 0.001
A	226	9	11	0.9	0.8 – 1.1	0.213	0.9	0.8 – 1.1	0.774
B	0.04	12	8	1.3	1.1 – 1.5	< 0.001	1.5	1.3 – 1.8	< 0.001
C	469	9	14	0.9	0.7 – 0.9	< 0.001	0.8	0.7 – 0.9	0.01
D	40	7	13	1.3	0.7 – 2.4	0.419	1.3	0.6 – 2.5	0.529
E	190	12	9	1.3	1.1 – 1.4	< 0.001	1.2	1.0 – 1.4	0.003
F	0.015	10	7	1.2	1.0 – 1.5	0.058	1.2	1.0 – 1.6	0.072
G	0.04	12	8	1.3	1.1 – 1.5	< 0.001	1.5	1.3 – 1.8	< 0.001
H	36	8	13	0.7	0.6 – 0.8	< 0.001	0.7	0.5 – 0.8	< 0.001
I	9	11	8	1.3	1.1 – 1.4	< 0.001	1.4	1.2 – 1.6	< 0.001
J	0.4	8	14	0.7	0.6 – 0.8	< 0.001	0.7	0.6 – 0.8	< 0.001
K	14	10	10	1.0	0.9 – 1.2	0.602	1.2	1.0 – 1.4	0.058
L	5	14	18	1.4	1.3 – 1.6	< 0.001	1.4	1.2 – 1.6	< 0.001
M	238	9	11	0.9	0.8 – 1.1	0.278	1.0	0.8 – 1.1	0.501
N	0.015	10	7	1.2	1 – 1.5	0.077	1.1	0.8 – 1.8	0.460
O	39	7	13	0.71	0.6 – 0.8	< 0.001	0.6	0.5 – 0.7	< 0.001
P	45	8	13	0.72	0.6 – 0.8	< 0.001	0.7	0.6 – 0.8	< 0.001
Q	244	9	11	0.94	0.8 – 1.1	0.336	1.0	0.8 – 1.1	0.719
R	0.035	12	8	1.3	1.1 – 1.5	< 0.001	1.4	1.2 – 1.7	< 0.001
S	39	7	13	0.7	0.6 – 0.8	< 0.001	0.6	0.5 – 0.7	< 0.001
T	189	12	9	1.2	1.1 – 1.4	< 0.001	1.2	1.1 – 1.4	< 0.001
U	224	9	11	0.9	0.8 – 1.1	0.273	1.0	0.8 – 1.1	0.862
V	0.025	13	8	1.3	1.2 – 1.5	< 0.001	1.4	1.2 – 1.6	< 0.001
W	45	8	13	0.7	0.6 – 0.8	< 0.001	0.7	0.6 – 0.8	< 0.001
X	464	9	14	0.8	0.7 – 0.9	< 0.001	0.8	0.7 – 0.9	< 0.001

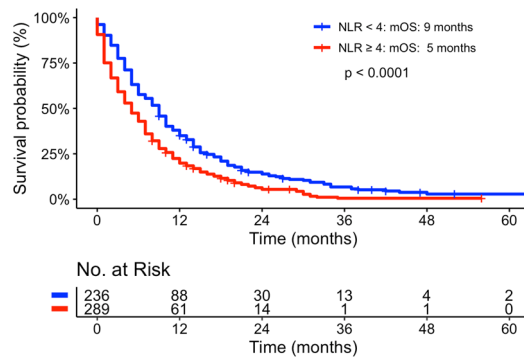IBI – Inflammation-Benchmark-Index; mOS – median Overall Survival.

Figure S2. Kaplan-Meyer Curves univariate comparison of sub-group analyses of NLR: (**a**) resected patients; (**b**) locally advanced; (**c**) metastasized patients.
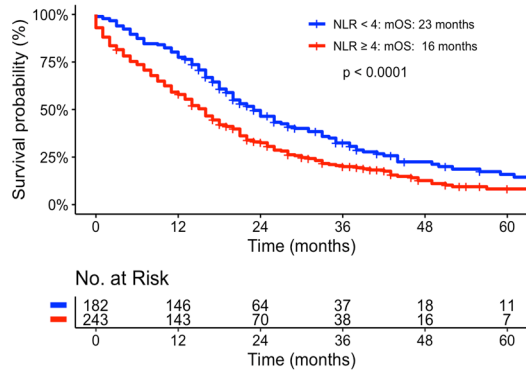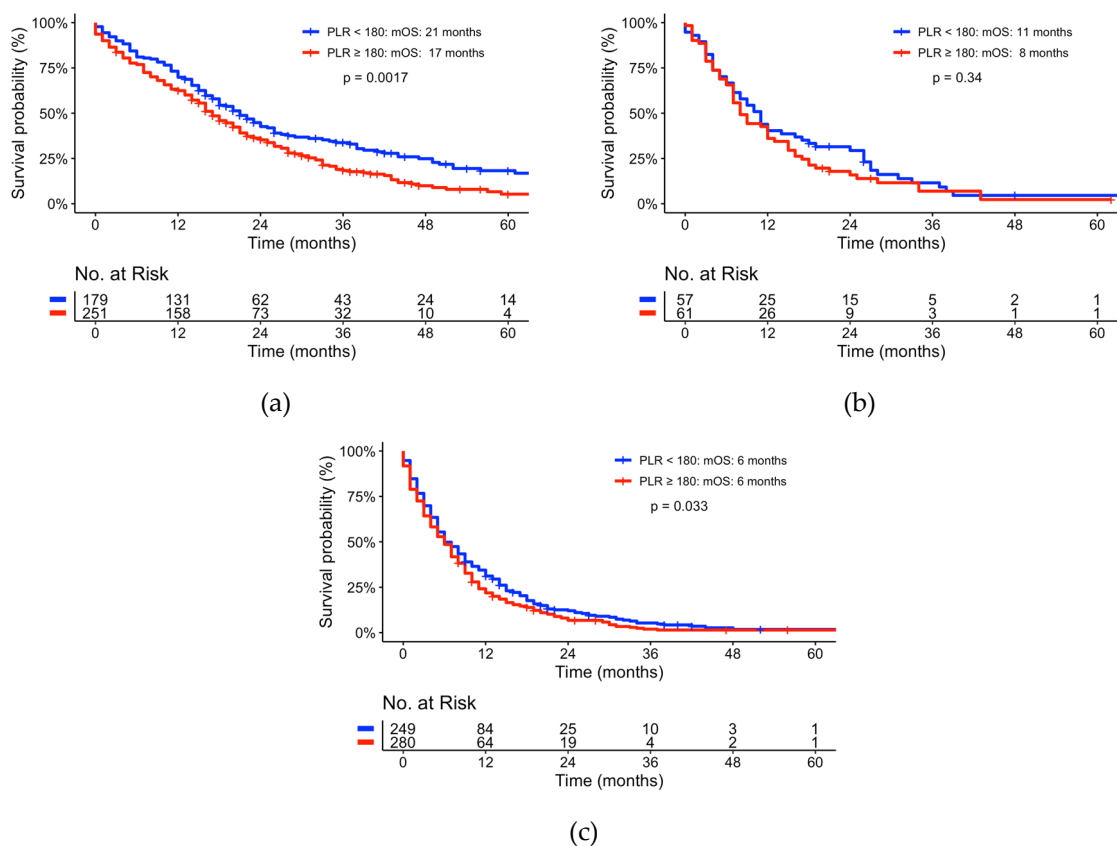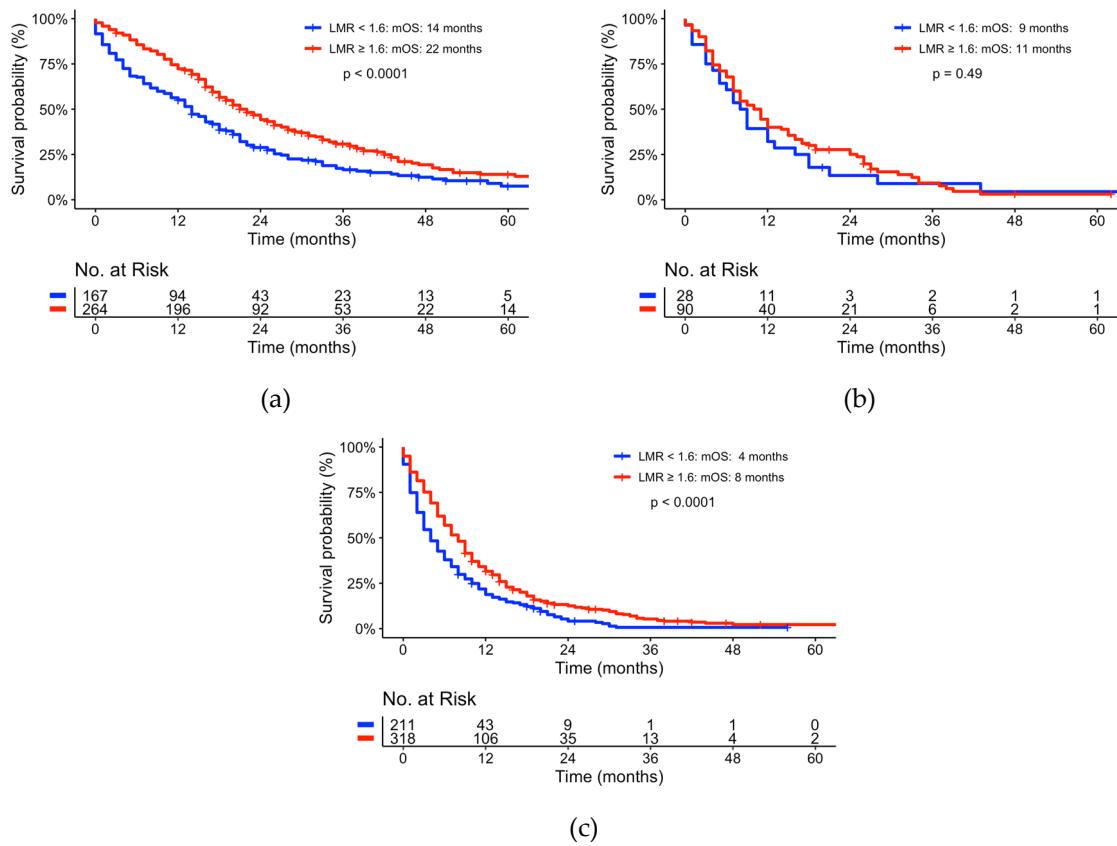

(a)

(b)

(c)
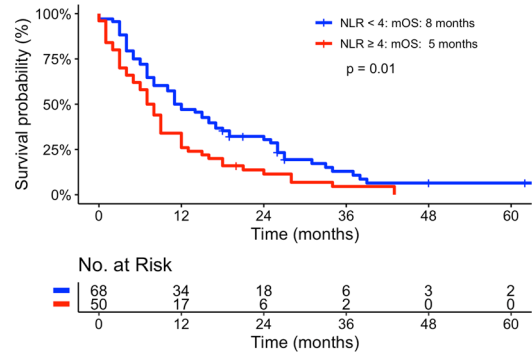
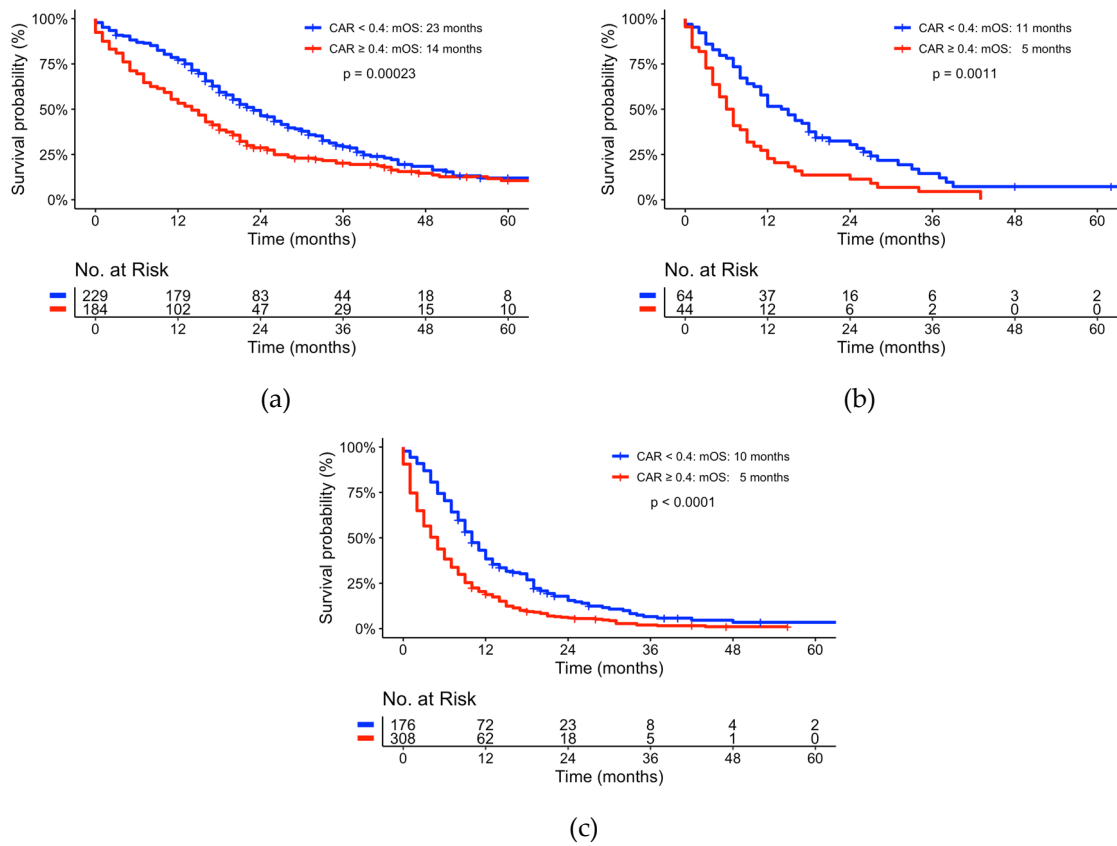NLR - neutrophile to lymphocyte ratio.

Figure S3. Kaplan-Meyer Curves univariate comparison of sub-group analyses of PLR: (**a**) resected patients; (**b**) locally advanced; (**c**) metastasized patients.
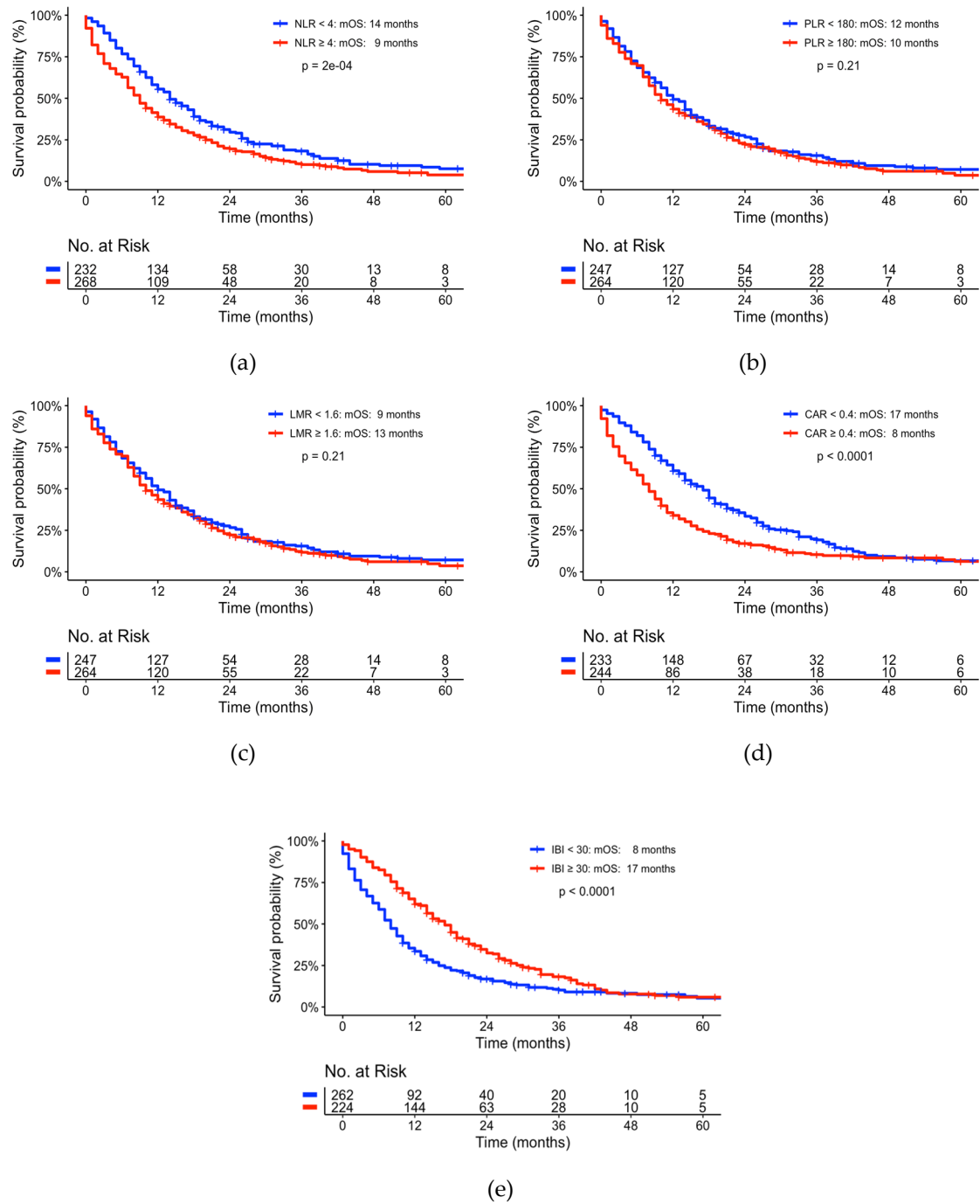

(a)

(b)

(c)

PLR - platelet to lymphocyte ratio.

Figure S4. Kaplan-Meyer Curves univariate comparison of sub-group analyses of LMR: (**a**) resected patients; (**b**) locally advanced; (**c**) metastasized patients.

(a)

(b)

(c)

LMR - lymphocyte to monocyte ratio.

Figure S5. Kaplan-Meyer Curves univariate comparison of sub-group analyses of CAR: (**a**) resected patients; (**b**) locally advanced; (**c**) metastasized patients.
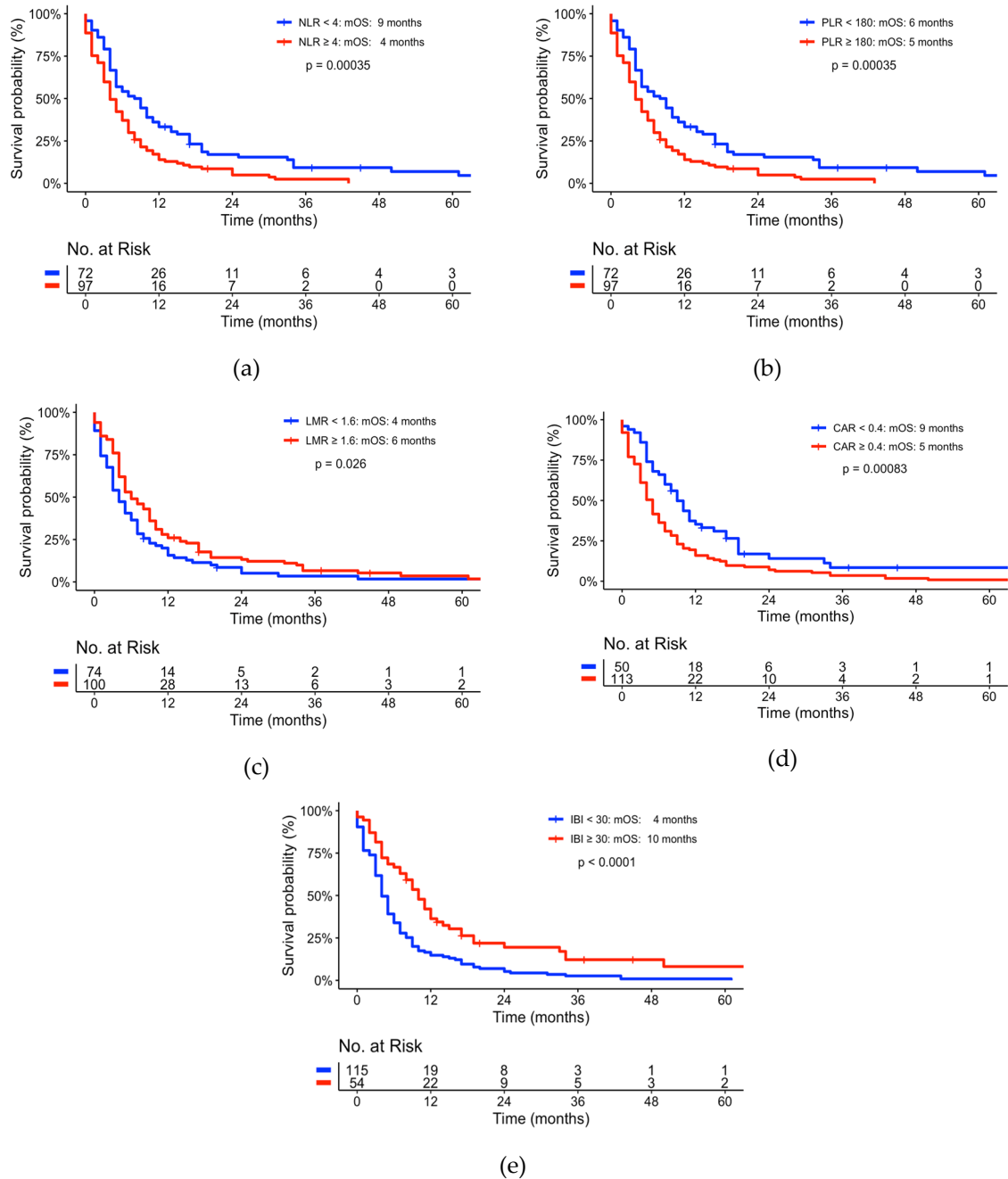

(a)

(b)

(c)

CAR - CRP to albumin ratio; CRP – C-reactive protein.

Figure S6. Kaplan-Meyer Curves univariate comparison of sub-group analyses for ECOG status 0-1 of: (**a**) NLR; (**b**) LMR; (**c**) PLR; (**d**) CAR; (e) IBI.

(a)

(b)

(c)

(d)

(e)

NLR - neutrophile to lymphocyte ratio; PLR - platelet to lymphocyte ratio; LMR - lymphocyte to monocyte ratio; CAR - CRP to albumin ratio; CRP – C-reactive protein; IBI – Inflammatory Benchmark-Index.

Figure S7. Kaplan-Meyer Curves univariate comparison of sub-group analyses for ECOG status >2 of: (**a**) NLR; (**b**) LMR; (**c**) PLR; (**d**) CAR; (e) IBI.

(a)

(b)

(c)

(d)

(e)

NLR - neutrophile to lymphocyte ratio; PLR - platelet to lymphocyte ratio; LMR - lymphocyte to monocyte ratio; CAR - CRP to albumin ratio; CRP – C-reactive protein; IBI – Inflammatory Benchmark-Index.