

Table S1. Clinical data of patients at diagnosis

| Variable | | Number (%) |
|---------------------------------|---|------------|
| All patients | | 59 (100) |
| Age at cancer diagnosis (years) | | |
| Median (SEM), range | 50.3 (1.61), 24.8-81.8 | |
| Histology | Invasive ductal carcinoma | 48 (81.3) |
| | Invasive lobular carcinoma | 6 (10.2) |
| | Another invasive carcinoma | 4 (6.8) |
| | Ductal carcinoma in situ | 1 (1.7) |
| Grade | Grade 1 | 3 (5.1) |
| | Grade 2 | 17 (28.8) |
| | Grade 3 | 36 (61.0) |
| | Unknown grade | 3 (5.1) |
| Subtype | Luminal-like | 37 (62.7) |
| | HER2-positive | 12 (20.3) |
| | Triple negative | 10 (17.0) |
| Tumor stage | T1 (≤ 20 mm) | 11 (18.7) |
| | T2 (> 20 mm in ≤ 50 mm) | 32 (54.2) |
| | T3 (> 50 mm) | 16 (27.1) |
| Nodal stage | pN0 | 11 (18.7) |
| | pN1 (1-3 positive nodes) | 16 (27.1) |
| | pN2 (4-6 positive nodes) | 6 (10.2) |
| | pN3 (>6 positive nodes) | 15 (25.4) |
| | No pathological stage | 11 (18.7) |
| M stage | M0 | 46 (78.0) |
| | M1 (primary metastatic) | 13 (22.0) |
| Surgery | Mastectomy and axillary dissection | 24 (40.7) |
| | Mastectomy and SNB | 4 (6.8) |
| | Breast conserving surgery and axillary dissection | 10 (16.9) |
| | Breast conserving surgery and SNB | 7 (11.9) |
| | Hygienic breast ablation | 1 (1.7) |
| | No surgery performed | 13 (22.0) |
| Adjuvant treatment | (Neo)adjuvant chemotherapy | 34 (57.6) |
| | Adjuvant radiation therapy | 39 (66.1) |
| | Adjuvant endocrine therapy | 32 (64.2) |

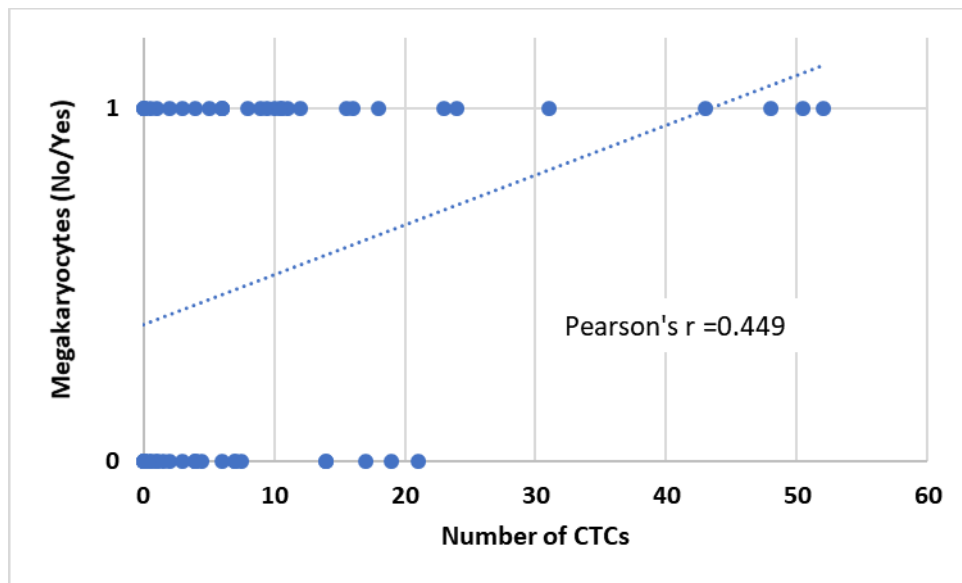
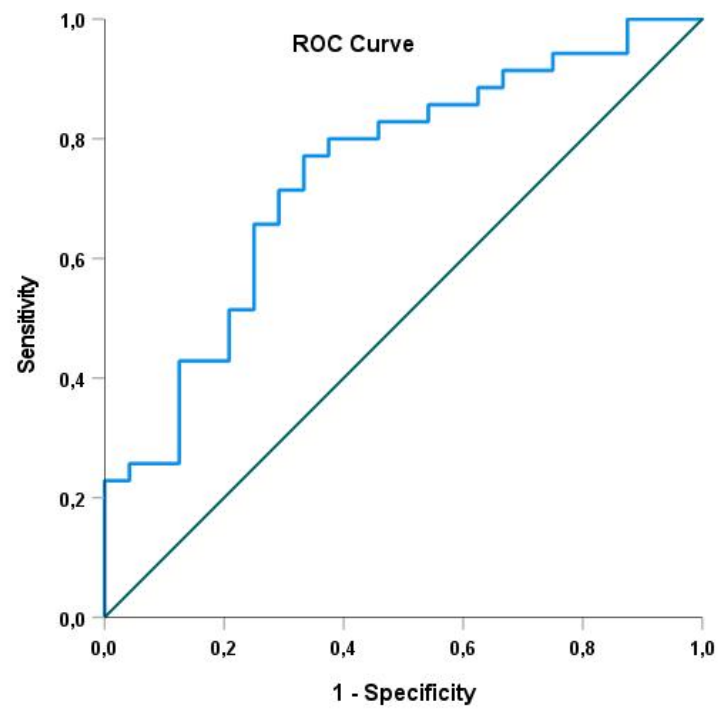


Figure S1. Correlation between the number of megakaryocytes and the number of circulating tumor cells (CTCs)

A



B

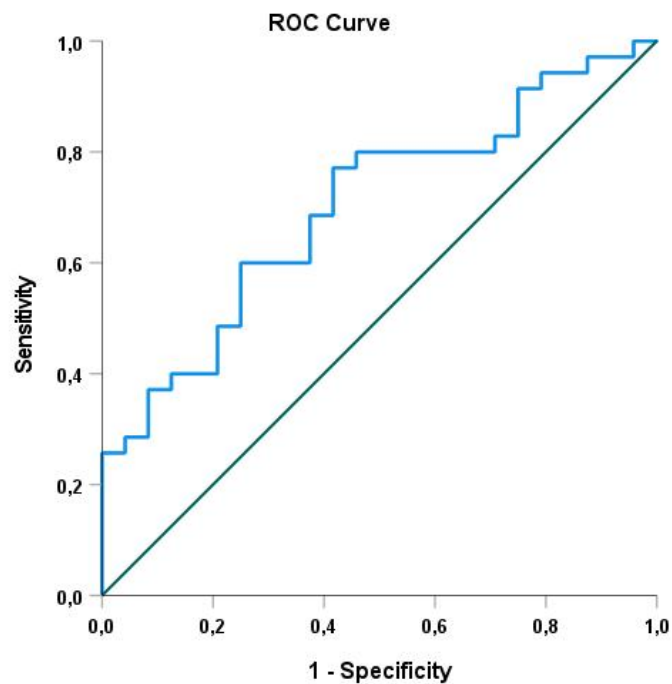


Figure S2. ROC curves) **(A)** for pan-inflammation value (PIV) and **(A)** systemic immune-inflammation index (SII).

The optimal cutoff value between the 'low' and 'high' PIV values was set at 368 and between 'low' and 'high' SII values at 840×10^9

Table S2. Comparison of clinical and blood-based characteristics between groups with high and low systemic immune-inflammation index.

| Variable | Low SII (<840) | High SII (≥840) | All | P-value |
|--|----------------|-----------------|-----------|--------------|
| Subtype | | | | |
| Luminal A/B | 19 (51.4) | 18 (48.6) | 37 (62.7) | 0.815 |
| HER2 positive | 6 (50.0) | 6 (50.0) | 12 (20.3) | |
| Triple negative | 4 (40.0) | 6 (50.0) | 10 (16.9) | |
| Type of therapy | | | | |
| Endocrine | 12 (63.2) | 7 (36.8) | 19 (32.8) | 0.113 |
| Chemotherapy | 16 (41.0) | 23 (59.0) | 39 (67.2) | |
| Line of therapy | | | | |
| 1 st -2 nd line | 15 (57.7) | 11 (42.3) | 26 (49.1) | 0.408 |
| 3 rd -4 th line | 9 (47.4) | 10 (52.6) | 19 (32.2) | |
| ≥5 th line | 5 (35.7) | 9 (64.3) | 14 (23.7) | |
| Cycle of therapy | | | | |
| 1 th -2 nd cycle | 9 (37.5) | 15 (62.5) | 24 (40.7) | 0.138 |
| ≥3 rd cycle | 20 (57.1) | 15 (42.9) | 35 (59.3) | |
| Skeletal metastases | | | | |
| No | 6 (28.6) | 15 (71.4) | 21 (36.2) | 0.019 |
| Yes | 23 (79.3) | 14 (37.8) | 37 (63.8) | |
| Liver metastases | | | | |
| No | 15 (60.0) | 10 (40.0) | 25 (42.4) | 0.153 |
| Yes | 14 (41.2) | 20 (58.8) | 34 (57.6) | |
| CTC clusters | | | | |
| No | 26 (48.1) | 28 (51.9) | 54 (91.5) | 0.612 |
| Yes | 3 (60.0) | 2 (20) | 5 (8.5) | |
| Megakaryocytes | | | | |
| No | 15 (63.6) | 13 (46.4) | 28 (47.5) | 0.519 |
| Yes | 14 (45.2) | 17 (54.8) | 31 (52.5) | |
| CTC group | | | | |
| 0 CTC | 4 (33.3) | 8 (66.7) | 12 (20.3) | 0.468 |
| 1-4 CTC | 11 (52.4) | 10 (47.6) | 21 (35.6) | |
| ≥5 CTC | 14 (53.8) | 12 (46.2) | 26 (44.1) | |

SII: Systemic immune-inflammation index (SII), CTCs: Circulating tumor cells.