**Supplementary Table S1:Tumor characteristics (TILs, immune cells, tumor epithelial cells, normal epithelial cells, fibroblasts, and plasma cells) of the study cohort.** Tumor characteristics were determined by an expert breast pathologist via counting the cells of interest microscopically on a H&E stained core biopsy tissue slide. P-values were calculated using a paired Wilcoxon analysis. TILs: Tumor Infiltrating Lymphocytes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Statistics** | ***De novo* metastasized BC group (dnMBC)** | **Non-primary metastasized BC group (eBC)** | **p-value** |
| **TILs (%)** |  |  |  | 0.760 |
|  | N | 32 | 32 |  |
|  | Median | 2 | 2 |  |
|  | Average | 7.47 | 2.90 |  |
|  | Range | [0.0; 80.0] | [0.0; 9.0] |  |
| Unknown | n/N (%) | 3/32 (9%) | 1/32 (3%) |  |
|  |  |  |  |  |
| **Immune cells (%)** |  |  |  | 0.480 |
|  | Median | 10 | 10 |  |
|  | Average | 15 | 12.10 |  |
|  | Range | [0.0; 60.0] | [0.0; 30.0] |  |
| Unknown | n/N (%) | 3/32 (9%) | 1/32 (3%) |  |
|  |  |  |  |  |
| **Tumor epithelial cells (%)** |  |  |  | 0.300 |
|  | Median | 50 | 50 |  |
|  | Average | 51.03 | 45.67 |  |
|  | Range | [30.0; 80.0] | [25.0; 60.0] |  |
| Unknown | n/N (%) | 3/32 (9%) | 1/32 (3%) |  |
|  |  |  |  |  |
| **Normal epithelial cells (%)** |  |  |  | 0.220 |
|  | Median | 2.50 | 0 |  |
|  | Average | 5.18 | 3.39 |  |
|  | Range | [0.0; 30.0] | [0.0; 15.0] |  |
| Unknown | n/N (%) | 4/32 (13%) | 1/32 (3%) |  |
|  |  |  |  |  |
| **Fibroblasts (%)** |  |  |  | 0.100 |
|  | Median | 30 | 35 |  |
|  | Average | 28.96 | 37.42 |  |
|  | Range | [0.0; 70.0] | [0.0; 70.0] |  |
| Unknown | n/N (%) | 3/32 (9%) | 1/32 (3%) |  |
|  |  |  |  |  |
| **Plasma cells (score) a** |  |  |  | 0.130 |
| 0 | n/N (%) | 23/32 (72%) | 25/32 (78%) |  |
| 1 | n/N (%) | 3/32 (9%) | 7/32 (22%) |  |
| 2 | n/N (%) | 3/32 (9%) | 0/32 (0%) |  |
| 3 | n/N (%) | 1/32 (3%) | 0/32 (0%) |  |
| Unknown | n/N (%) | 2/32 (6%) | 0/32 (0%) |  |
|  |  |  |  |  |
| a Categories of the plasma cells were enlisted as 0: none; 1: few scattered; 2: small clusters of 5 plasma cell and at least one; 3: if clusters they are merging (usually plasma cells everywhere) | | | | |
|  |
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