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**Differences in Immune Cell Composition in Breast Cancer Between East Asian and Western Countries**

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The clinicopathological features and prognosis of breast cancer in Asia are different from those in the West. Tumor-infiltrating immune cells are known to influence the survival of patients with breast cancer. We compared the amount and composition of immune cells through gene expression profiling between Asian and Western patients with breast cancer. We obtained gene expression profiles from 8 data sets. The ESTIMATE package and CIBERSORT algorithms were used to determine the immune score and composition of tumor-infiltrating immune cells, respectively. This study examined 764 Asian and 1491 Western patients with breast cancer. Compared with Western patients, Asian patients had longer survival, and their tumors had a significantly higher ESTIMATE immune score (1193 vs. 916,  $P < 0.001$ ). A higher immune score was associated with longer overall survival of Asian and Western patients. Furthermore, compared with Western patients, Asian patients had a different immune composition, such as a higher proportion of plasma cells, M1 and M2 macrophages, and follicular helper T cells and a lower proportion of CD8+, CD4+, and regulatory T cells and dendritic cells. The prognostic effects of some subsets, such as activated natural killer, naïve B, resting dendritic, and activated mast cells, were different between the two groups. Compared with Western patients with breast cancer, Asian patients had a more favorable prognosis, a higher immune score, different cell compositions, and different prognostic effects of immune cells.