Triple-negative breast cancer (TNBC) is the most aggressive subtype of breast cancer, defined by the absence of ER, PR, and HER2 expression. Therapeutic options remain limited, with chemotherapy as the mainstay of treatment. Among patients with high-risk early-stage TNBC, the risk of early relapse and breast cancer–specific mortality is notably high. The integration of immune checkpoint inhibitors into neoadjuvant chemotherapy—most notably pembrolizumab in the KEYNOTE-522 trial—has become the new standard of care, demonstrating improved event-free survival (EFS). Yet, despite this advancement, a substantial proportion of patients still relapse early, even among those achieving pathologic complete response (pCR), underscoring the limitations of current strategies. Biomarkers such as PD-L1 expression and tumor-infiltrating lymphocytes (TILs) have been explored for predictive value, but no validated molecular signature exists to reliably identify patients at risk of early failure. Therefore, further efforts are warranted to explore and validate prognostic and predictive biomarkers, evaluate real-world outcomes in Taiwanese cohorts, and assess the efficacy and clinical benefit of the KEYNOTE-522 regimen (immunotherapy plus anthracycline- and taxane-based chemotherapy), with the ultimate goal of identifying which patients are most likely to benefit from the combined approach.