Mucinous Breast Carcinoma

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Commentary

Breast cancer is one of the most common cancers in women, and its spectrum is expanding over time. The World Health Organization (WHO) 2019 update on breast tumour classification described more than ten subtypes of breast cancer. Mucinous carcinoma (MC) can develop at any atomic site of the body, including the GI tract, the pancreatobiliary and urinary tracts, and the lung. However, the prognosis of MC varies depending on the anatomic location. Although mucinous differentiation confers a poor prognosis in the GI and pancreatobiliary tracts, pure MC portends a better prognosis in the breast when compared to invasive ductal carcinoma (IDC), the most common breast cancer.

IDC is also known as non-specific invasive breast carcinoma. In comparison, numerous subtypes of breast carcinoma with varying prognosis and hormone receptor status have been described. When more than 90% of the sampled tumour is made up of special type breast carcinoma, the tumour is labelled as pure special type breast carcinoma. A mixed carcinoma is a tumour that is composed of 50-90 percent special type carcinoma (a mixture of IDC and special type breast carcinoma). Hormone receptors and the presence of human epidermal growth factor receptor-2 (HER2/neu) play critical roles in human breast cancer prognosis and management. Different types of breast cancer possess varying proportions of oestrogen receptor (ER), progesterone receptor (PR), and HER2/neu expression. Only a few studies have looked at the clinicopathological and hormone receptor profile of this rare type of breast cancer. As a result, we compared the clinicopathological characteristics of MC and IDC in our population in this study.

Pure mucinous breast carcinoma (PMBC) is a rare type of breast cancer characterised by abundant extracellular mucin production, accounting for 1–6% of all cases of breast cancer. PMBC has distinct clinic pathological and molecular features, such as higher oestrogen receptor (ER) and progesterone receptor (PR) expression, a higher likelihood of human epidermal growth factor receptor-2 (HER2)-negative status, lower grade, and a lower risk of nodal metastasis, all of which contribute to better outcomes when compared to invasiveductal carcinoma (IDC); indeed, the 10-year disease-free survival rate is higher in PMBC.

Furthermore, the median age of PMBC patients was 70 years, which was significantly older than the median age of patients with other histological subtypes. In clinical practise, the recommendation for adjuvant treatment of PMBC differs from that for other histologies of breast cancer. Previous research has discovered that breast-conserving surgery (BCS) is an appropriate surgical procedure for the majority of patients with early-stage PMBC. Several prospective clinical trials in patients with visive breast carcinoma have shown that omitting postoperative radiotherapy (RT) following BCS is safe and associated with an acceptable low risk of local recurrence and without a detriment to overall survival (OS) among female patients who are elderly (aged 50, 65, or 70 years), tumour size 5 cm (T1–2), and node-negative (N0) disease. However, none of these trials stated whether or not PMBC patients were included.

Moreover, in the trials evaluating the absence of postoperative RT, endocrine treatment was required, and there were statistically significant differences in local control rates, despite the fact that recurrence rates were very low in general. There is currently no clear recommendation for the best management of elderly PMBC patients with a low risk of local recurrence. In light of this, we used data from the large and current Surveillance, Epidemiology, and End Results (SEER) programme to determine population-based practise patterns and survival outcomes in PMBC patients receiving postoperative RT, especially among the elderly.

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