Predicting Survival of De Novo Metastatic Breast Cancer in Asian Women: A Systematic Review and Validation Study*

Up to 25% of the breast cancer patients in Asia demonstrated distant metastases at diagnosis. Yet, predicting the individual outcome of a patient is difficult due to the heterogeneous survival probabilities of de novo metastatic breast cancer. This study identifies the existing prognostic models for patients with de novo metastatic breast cancer and validates them in Asia.

A systematic review of the available literature was performed in accordance with PRISMA guidelines to identify the prediction models for metastatic breast cancer. The prediction models were validated in 642 Asian de novo metastatic breast cancer patients, with a median age of 53 years (range, 24-94), who were registered in the Singapore-Malaysia Hospital Based Breast Cancer Registry between 2000 and 2010. A log rank test was used to test the Kaplan Merier survival curves plotted for the low, intermediate and high-risk score patients based on the prognostic score while a concordance statistic (C-statistic) was used to assess the discrimination of the models.

A total of 16 predictions tools were identified based on the 1,298 titles resulted from the search. Eight models out of the 16 prediction models were for patients with metastatic breast cancer, while 7 models were for patients with brain metastasis from breast cancer, and 1 model was for breast cancer patients with metastatic spinal cord compression. In the models, the most common predictors were performance status, ER status, metastatic site(s) and disease-free intervals.

Only 9 models were able to be validated from the study sample. C-statistic results reveal a range of 0.51 to 0.63, indicating that the ability of the different models to classify poor and good survivors varied from poor to fair.

The study concluded that the existing prediction models can only moderately predict the survival of Asian women with de novo metastatic breast cancer. A new prediction model catered to the Asian population needs to be developed to aid in prognosis.

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