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Breast cancers behave differently before and after the age of 70

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Researchers in Belgium have discovered that increasing age affects the way breast cancer behaves. As women approach the age of 70, they become less likely to be diagnosed with aggressive tumours that have spread to the lymph nodes. But after 70, the cancer is increasingly likely to spread, particularly if the tumours are small.

Until now, there has been conflicting evidence on aging and lymph node involvement and this study is the first to show clearly how the link between the two changes before and after the age of 70.

Professor Hans Wildiers told the 6th European Breast Cancer Conference (EBCC-6) in Berlin today (Friday), that he suspects that women older than 70 have decreased immune defence mechanisms, which are less able to deal with tumours that are likely to metastasise to other sites in the body.

“The effect of age of lymph node positivity is not straightforward. There seems to be a different effect between women aged up to 70 years and women older than 70. For the younger group of women, age appears to have a negative effect on lymph node status – the older they become, the less likely the cancer is to have spread to the lymph nodes. For the older group of women (aged over 70), age appears to influence lymph node status in the opposite way – the older they become, the more likely they are to have cancer cells in the lymph nodes if the tumour is small,” said Prof Wildiers, who is adjunct head of clinic in the department of general medical oncology at the Multidisciplinary Breast Centre, University

Hospitals Leuven, Belgium.

“There is an interaction between age and tumour size, suggesting that, up to the age of 70, age mainly has a positive effect on lymph node status for older women with small tumours. A likely explanation is that breast tumours metastasise less frequently to lymph nodes with increasing age due to the decreased biological aggressiveness in these tumours. On the other hand, over the age of 70, if the tumours have the potential to metastasise to lymph nodes, this occurs more rapidly in smaller tumours and this might be related to decreased immune defence mechanisms in elderly patients.”

Prof Wildiers and his colleagues investigated 2,227 women who had been treated for breast cancer between 2000 and 2006 at the University Hospitals Leuven. Then they compared the results with a separate database of over 11,000 breast cancer patients on the Eindhoven Cancer Registry.

They found that for women aged 70 or younger, increasing age was associated with a decreased prevalence of cancer spreading to the lymph nodes. The women’s risk of having positive lymph nodes decreased by 13% for every decade they aged, up to age 70.

Once aged 70 and over, the odds of lymph node involvement doubled with every 10-year increase in age for women who had tumours that were no bigger than 15mm across. If the tumours were larger than 42-43 mm, then risk of lymph node involvement continued to decrease.

Prof Wildiers said: “We know that the elderly have depressed immune defences, and, therefore, it is possible that these decreased defences are unable to prevent invasion of the lymph nodes by metastases in a subset of breast tumours in elderly women. Although breast cancer survival in older women appears to be similar to survival in the general population

irrespective of disease status, it might well be that there is a balance in the elderly between, on the one hand, a less aggressive type of tumour, and, on the other hand, their decreased immunological defences."

He said the findings supported the idea that there are two types of tumour in elderly women: ones that are slow-growing and don't invade the lymph nodes even if the tumours are larger, and ones that are aggressive and metastasise very early to the lymph nodes. Women with slow-growing tumours might benefit from less aggressive treatment, while the smaller tumours in the women aged over 70 might need to be treated more aggressively.

"Further research now needs to be conducted into the role the immune system plays in lymph node invasion," he concluded.

Source: ECCO-the European CanCer Organisation