The effect of preoperative breast MRI on the surgical management of ductal carcinoma in situ and the risk of contralateral breast cancer


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INTRODUCTION

In patients with ductal carcinoma in situ (DCIS) of the breast, optimal estimation of the size and growth pattern of the DCIS is crucial for planning surgical treatment and minimizing involved margins in patients treated with breast conserving surgery. MRI has been used increasingly for this purpose. However, until now its benefit has not been proven.

AIM:

To analyse the use of MRI in patients with DCIS and its impact on surgical treatment in the Netherlands

METHODS

6151 patients undergoing primary surgery for DCIS between 2011 and 2013 were identified through the Netherland Cancer Registry. The following data were documented: use of MRI, year of diagnosis, age at diagnosis, hospital type and volume, histological grade, multifocality in the resection specimen, margin involvement and type of surgery. We analyzed whether the use of MRI was related to the type of surgery, surgical margin involvement and diagnosis of synchronous contralateral breast cancer.

RESULTS

In 1359 (22%) patients diagnosed with DCIS, a breast MRI was performed preoperatively. In the multivariate analysis, patients <50 years of age compared to patients aged 70 years or older (OR 4.25, 95% CI 3.38-5.36), patients with high grade DCIS (OR 1.66, 95% CI 1.36-2.03) compared to patient with low grade DCIS and patients with multifocal disease (OR 1.90, 95% CI 1.57-2.30) compared to those with unifocal disease, were more likely to undergo MRI.

Patients undergoing MRI were 4 times more likely to be diagnosed with contralateral breast cancer compared to those with mammography. Surgical margin involvement was equal in the MRI group compared to the non-MRI group (OR 1.06, 95% CI 0.87-1.29) and slightly more secondary mastectomies were performed in the MRI group, although this was not statistically significant (OR 1.38, 95% CI 0.99-1.93).

Patients who underwent MRI were 4 times more likely to be diagnosed with contralateral breast cancer compared to those with mammography only (OR 4.66, 95% CI 3.37-6.45).

CONCLUSION

- In the MRI group, twice as many patients with DCIS were treated with mastectomy.
- In the MRI group, margin involvement after breast conserving surgery was not lower.
- MRI detected four times more contralateral breast cancer than mammography.

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Krakow, 14 - 16 September 2016