Contralateral Prophylactic Mastectomy Use in New Zealand Breast Cancer Patients

Jebb, Abbey[1,2]; Campbell, Ian[3]; Shirley, Rachel[3]; Barrios, Mark[4]; Porter, David[1]

[1]*Auckland City Hospital, Auckland, New Zealand*
[2]*University of Auckland, Auckland, New Zealand*
[3]*Waikato Breast Cancer Trust, Waikato, New Zealand*
[4]*The Auckland Breast Cancer Study Group, Auckland, New Zealand*

Background:
Contralateral prophylactic mastectomy (CPM) is increasingly used internationally to prevent contralateral breast cancer (CBC) after an initial breast cancer diagnosis, despite uncertain evidence of survival benefit in sporadic cancers, and in the context of reducing CBC rates within the developed world. CPM rates in New Zealand (NZ) are undocumented.

Aims:
To describe CPM use in NZ, and the characteristics of patients choosing this surgery. To quantify how CPM influences risk of metastatic disease and mortality, and document local rates of CBC.

Methods:
Information for all patients with invasive unilateral breast cancer between June 2000 and December 2012 was provided by the Auckland and Waikato breast cancer registries. CPM was defined as mastectomy of the healthy contralateral breast concurrently or within a year of definitive surgery for unilateral breast cancer. Patients with bilateral cancer, metastatic disease, in situ carcinoma, or non-definitive surgery were excluded.

Results:
244 of 10,374 patients with unilateral breast cancer underwent CPM. All were female. CPM rates increased over time, from 2 patients (0.55%) in 2000 to 42 patients (4.5%) in 2010.

CPM patients were younger at diagnosis (mean 51.3 years, cf. 57.8 years), and more often European (80.7%, cf. 68.7%) or Maori (10.7%, cf. 8.8%). 44.4% had family history of breast or ovarian cancer affecting a first degree relative (cf. 19.1%), and 58.1% had a relative of any degree affected (cf. 29.4%). 4.5% having CPM were BRCA positive (cf. 0.44%).

Multifocal cancers were more frequent in patients undergoing CPM (68.9%, cf. 18%), as was lobular carcinoma (18.6%, cf 11%), and tumours of higher pathological T stage (T3 or T4 cancer in 9.8%, cf. 6.8%). Groups were similar regarding nodal stage (node positive 37.7%, cf. 36.8%), tumour grade (grade 3 33.3%, cf. 28.7%) and receptor status (ER positive 78.2%, cf. 80.2%, and HER2 positive 18.1%, cf. 16.1%). Prophylactic surgical oophrectomy rates were higher in patients having CPM (11.7%, cf. 2.9%), as was use of chemotherapy (52.9%, cf. 36.8%) and HER2 directed therapy (12%, cf. 6.3%).

CPM did not improve all cause mortality (HR 0.93, p value 0.71), breast cancer specific mortality (HR 1.2, p value 0.34) or incidence of metastatic disease (HR 1.2, p value 0.34). 57 patients without CPM (0.55%) developed CBC, with median follow-up of 4.6 years.

Conclusion:
CPM use is increasing in NZ despite a low incidence of CBC. CPM has not improved patient survival or reduced the risk of developing metastatic disease.