

## Prediction of persistent pain after breast cancer surgery

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### Background:

Previous studies have reported that 15-25% of patients treated for breast cancer experience long term moderate to severe pain in the area of surgery<sup>1</sup>, potentially lasting for several years<sup>2</sup>. Few prospective studies have included all potential risk factors for the development of persistent pain after breast cancer surgery (PPBCS). The aim of the present prospective cohort study was to comprehensively identify factors predicting PPBCS.

### Methods:

Patients scheduled for primary breast cancer surgery were recruited. Assessments were preoperatively, the first 3 days postoperatively and 1 week, 6 months and 1 year after surgery. A comprehensive validated questionnaire was used. Handling of the intercostobrachial nerve (ICBN) was registered by the surgeon. Factors known by the first 3 weeks after surgery were modelled in ordinal logistic regression analyses.

### Results:

537 patients with baseline data were included and 475 (88%) were available for analysis at 1 year. Prevalence of moderate to severe pain at 1 year was 14% in rest and 7% during movement. Factors associated with pain in rest was age <65 years (OR: 1.8, p=0.02), breast conserving surgery (OR: 2.0, p=0.006), axillary lymph node dissection with preservation of the ICBN (OR: 3.1, p=0.0005), moderate to severe preoperative pain (OR: 5.7, p=0.0002), acute postoperative pain (OR: 2.8, p= 0.0018) and signs of neuropathic pain at 1 week OR: 2.1, p=0.01. Higher preoperative diastolic blood pressure was associated to reduced risk of PPBCS (OR 0.98 per mmHg, p=0.01).

### Conclusion:

Both patient and treatment related risk factors predicted PPBCS. Identifying patients at risk may facilitate targeted intervention.

- (1) Andersen KG, Kehlet H. Persistent pain after breast cancer treatment: a critical review of risk factors and strategies for prevention. *Journal of Pain* 2011;12:725-746.
- (2) Mejdahl MK, Andersen KG, Gartner R, Kroman N, Kehlet H. Persistent pain and sensory disturbances after treatment for breast cancer: six year nationwide follow-up study. *BMJ* 2013;346:f1865.