

## **Investigating radiotherapy protocols for breast carcinoma:**

### **An evaluation of respiratory morbidity, treatment accuracy and efficacy**

**Heidi Probst**

#### **ABSTRACT**

Treatment of breast cancer has become multidisciplinary with radiotherapy playing a fundamental role. Owing to its high incidence, breast cancer can utilise a substantial proportion of the radiotherapy treatment capacity. It is therefore necessary to consider the impact that technical approaches have on the use of resources, as well as ensuring that treatment policies result in the best outcomes for patients.

The Project aims were:

To investigate the relationship between the depth of lung incorporated in the tangential chest wall fields and lung symptoms identified from patient self reports.

To identify the effectiveness of two skin marking options, and their impact on the use of resources.

#### **Method**

A randomised trial was used with patients randomised to one of two skin marking options and one of two lung depth categories. The primary outcome measures were patient self reports of a dry unproductive cough (DUC) post treatment and levels of treatment accuracy. Secondary outcomes included quality of life scores,

patient experiences of the skin marking options and use of resources. A sample of 360 patients from one radiotherapy centre consented to participate in the study.

### Results

On an intention to treat basis no difference in post treatment symptoms for DUC could be identified between the two lung depth categories. A logistic regression identified: patient age, the use of loco-regional radiotherapy, and symptoms of DUC pre treatment as significant in determining the risk of patients developing symptoms post treatment.

No difference in treatment accuracy for the two skin marking options could be identified. A cost-effectiveness evaluation of the two skin marking options was unable to detect a cost saving for either option with no significant difference in effectiveness demonstrated between the two groups.

### Discussion

Within the range of lung volumes treated the central lung depth was found to have no influence on the post treatment scores for DUC. However, as a significant proportion of data was missing, the failure to find a difference in reporting of post treatment DUC should be treated with caution. The factors found to influence symptoms in the patient sample may help practitioners to identify high risk patients prior to treatment.

Overall the results have provided a first step in building an evidence base to inform future practice in this field, as well as identifying further areas for study.