

# Evaluation of Polymeric Membrane Dressing for Radiotherapy Induced Skin Reactions

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## Introduction

In England, over 275,000 people per year are diagnosed with cancer and more than half of these receive radiotherapy<sup>1</sup>. Bart's radiotherapy department sees approximately 1000 patients per year. A current skin care protocol consists of hydrogels, covered with a non-adhesive dressing secured with bandages. Post treatment, topical anti-inflammatory cream is applied. The Radiation Therapy Oncology Group (RTOG) acute radiation morbidity scoring criteria is commonly used to classify skin reactions, which range from 0 - 4<sup>2</sup>. Most patients with RTOG of 2 - 2.5 will progress onto RTOG 3. With a current average healing time of 4 - 6 weeks<sup>3</sup>, a clinical evaluation of Polymeric dressing was undertaken to determine its efficacy and potential to improve patient outcomes.

## Methodology

Full consent was obtained and any patient could withdraw. This study aims to evaluate if a polymeric membrane dressing is effective for the management of patients presenting with a RTOG score of 1 - 2.5 over a four-week period. In particular, to assess its performance in: Improving skin integrity, managing dry and moist desquamation, relieving pain and inflammation improving quality of life. An evaluation form used provided information on the patient's age, gender, dosage, nutritional status, cancer type and location, RTOG rating, wound pain and dressing change. In addition, patients were given a free text daily diary to record pain scores using the Wong and Baker Face scale, type and level of analgesia and sleep patterns. The evaluation consisted of baseline details and continued for a maximum of 4 weeks.

## Results

A total of 74 evaluations were completed 23 patients with a mean age of 60. Cancer types, 8 head and neck, breast cancer, 7 patients, anal cancer, 3 patients, vulva cancer, 3 patients and lower leg, 2 patients. 48% (11) patients had an RTOG grade 2.5 (moist desquamation with sloughy tissue), 48% (11) patients had an RTOG grade of 2 (bright erythema/dry desquamation with sore, itchy and tight skin) and 4% (1) had an RTOG grade of 3 (confluent moist desquamation).

Fig 1. Pain scores. As the study progressed, the documentation of pain scores reduced. It is impossible to state if this was due to the dressing, analgesia or lack of documentation. It is evident the records for the first 14 days were more accurate with an average score of 6.3 on day 1. The total number of patients at week two totalling 18/23 had a mean pain score of 1.8.

Fig 2. Patient recorded Sleep patterns. Sleep is an important process that aids healing. Loss of sleep can often be linked to pain and stress. It was felt that if the dressings were able to reduce inflammation and pain then sleep patterns would improve. Fig 2. Shows the individual patient diary sleep patterns of 20/23 patients records. Week one, 6/23 patients were recording sleep patterns of none to 2-4 hours. By day 6, all patients recorded sleep patterns 4-6 to 6-8 hours. It must be remembered that by day six, 8 patients had stopped recording sleep patterns. By day 11, a total of 15 patients had stopped recording sleep patterns.

## Conclusion

This study into the treatment of radiotherapy induced skin reactions, improved wound management in regards to pain, exudate control and patient comfort. Some of the anatomical areas treated created challenges in securing the dressings and this study highlighted the need for training in this area. The patient diaries gave the authors valuable insight in the management of patients with RTOG damage.

## Patient Pain Diaries

### Patient 1

"Wore dressing all day. Found I went to lay down in afternoon and realized I sitting for a little while something I have not been able to do for a long time. Did not sleep v well but did not get any pain until 5pm Took 2 paracetamol at 6.15pm."

### Patient 2

"July 16th - going to see nurse today to get clean dressing nurse said looking good only a little discomfort when I walk and sit down dressing definitely helps when you put a clean one on pain definitely easier."

### Patient 6

"By keeping the dressing damp with saline solution relief was achieved when the infection was at its worse the dressing needed to be changed twice a day."

### Patient 8

"No pain no soreness or itching relieved."

### Patient 9

"I have no problem endorsing the product given that it is essential a product that is truly fit for purpose."

### Patient 15

"Soon as dressing applied pain eased."

## References

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