Evaluation of a polymeric membrane dressing (PolyMem) in the management of radiotherapy induced skin reactions in head and neck cancer patients

Introduction
Radiation induced skin reactions are a known side effect of radiation treatment. The increased use of advanced radical treatments can result in a higher number of patients experiencing a skin reaction. It is estimated that approximately 87% of patients will get a moderate to severe skin reaction, with around 10-15% of patients developing moist desquamation. Internationally, there are many preventative treatment options recommended, with varying degrees of evidence of success. Various factors affect the severity of skin reactions including; area treated, radiotherapy dosage, fractions of radiotherapy delivered, concomitant treatment (chemotherapy), age and any co-morbidity. The standard treatment at Mount Vernon cancer centre consisted of topical aqueous cream or paraffin gauze. UK radiotherapy departments are using a variety of products as shown from guidelines published in 2011.

Method
The aim of this study was to evaluate if PolyMem was effective in the management of patients presenting with RTOG scale 1-2.5 by improving skin integrity, managing dry and moist desquamation, relieving pain and inflammation and improving quality of life. Full consent was obtained and any patient was able to withdraw from the evaluation at any time. A bespoke evaluation form was used to capture detailed information on the patient’s age, gender, radiotherapy dosage, nutritional status, cancer type and location, RTOG rating, wound pain score and pain at dressing change. Patients were provided with a diary to keep a daily record of their wound pain score using a numerical and Wong and Baker Face scale and were asked to describe pain related to disease or dressing change. Pain medication and sleep patterns were recorded by patients. Patients could also record more detailed observations in a free text patient diary. The study consisted of baseline details and continued for a maximum of 4 weeks. Each week, the RTOG rating, wound size, location and description, pain score of wound, pain associated with dressing change and dressing wear time was completed by the clinician, patient’s or carers.

Results
A total of twenty patients were recruited, 17 men and 3 women, with a mean age of 56.8. All patients had a primary diagnosis of head and neck cancers. 30% of patients had a primary diagnosis of squamous cell carcinoma of the larynx. Nutritionally, 40% of patients were deemed to have good nutritional status whilst 35% were peg fed patients. The delivery dose of radiotherapy was considered important with regards to skin damage with 55% of patients received 65Gy in 30. 65% of patient’s had RTOG 2, 25% RTOG rating 2.5. One of the most significant findings in this study included the decline in wound pain scores between week 1-3, both on the numerical rating description and Wong and Baker grades listed by clinicians and patients. By week two, 6/20 patients had completely healed and dressings were discontinued. By week three, 11/20 healed and week four, 15/20 of patients had healed. At the start of this study, 44% of patients had dry desquamation and 16% moist desquamation. Week four, 75% of patients healed, 10% had moist desquamation, 15% had tissue type that was described as granulation and epithelialisation. Patient diaries were invaluable data with common themes including increased sleeping hours, dramatic reduction in pain during wear time of the dressing and increased healing rates.

Discussion
Skin damage does not present immediately. Skin reactions were noted during week three - five. The dose of prescribed radiation did not appear to have an impact on the severity of skin reaction. This was thought to be attributed to the underlying general health of the patient. The majority of patients were men and this raises the question; are men more prone to head and neck cancers? As patients were actively encouraged to take part, this has given the author valuable insight into the importance of involving patients from the start. One of the comments from the patients included, “when the dressing is removed within a short space of time the burn dries and hurts like hell. When the dressing is applied, the relief is almost instant and the pain drops to 0.”

Conclusion
This study demonstrates the advantages of an advanced wound dressing product such as PolyMem when used for the treatment in very vulnerable patients presenting with radiotherapy induced skin damage. The data collated was comprehensive and it was beyond the remit of this submission to share all the information gathered. The authors plan to go on to share this experience with their colleagues in a full publication.

References
4. Ellen Truman EWMA (European wound Management Association) Managing radiotherapy Induced Skin Reactions 2011

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