Skin care advice for patients undergoing radiotherapy: A review of the evidence

College of Radiographers Working Party for Radiotherapy Skin Care Practice Guidelines

BACKGROUND
Radiation induced skin reactions (RISR) from external beam radiotherapy (EBRT) are one of the most common side-effects from treatment (1). They may cause distress to some patients, and can limit radiation dose and treatment schedules. Some patients are more likely to experience a significant radiation reaction, depending on several clinical factors.

Recently IMRT and hypofractionation offer the opportunity to potentially reduce skin toxicity. Despite changes in practice and numerous published guidelines, skin care appears to have changed little over the years, with no consensus amongst centres using different skin care regimens, product use and approaches.

It is unlikely that RISR can be completely prevented, the current driver is to delay the onset and minimise the severity of a skin reaction, to reduce symptom related discomfort, and prevent further complications.

METHODOLOGY
A wide variety of practices exist in radiotherapy departments in the United Kingdom (UK) with respect to both the prevention and management of RISR by EBRT despite the publication of best practice guidelines (2) and the results of two surveys conducted by the College of Radiographers (3, 4). There also remains disparity within the published research, with no one topical application or medical intervention being clearly deemed superior.

DEVELOPMENT PROCESS
An extensive literature review was undertaken in 2010 of published articles from 1980 to October 2010 using MEDLINE, EBSCO EJS, Science Direct, ISI Web of Science databases which was updated in 2014. Surveys of radiotherapy services across the UK were conducted in 2011 and 2014.

The role of the Core Group and the Steering Group has enabled this systematic review of the best available evidence from both research and expert opinion to be subjected to peer, professional, and lay assessment.

RESULTS
- 52% of UK departments are not recording the incidence of extrinsic and intrinsic factors
- Some products were identified as contraindicated for the use on radiotherapy skin reactions; topical antibiotics (unless proven infection) and gentian violet
- A plethora of agents are being used on the skin in a non-standardised fashion
- Overall the evidence base is not strong enough to either support or refute the use of any particular product for topical application
- Consensus is closer on two factors:
  - Aqueous cream should not be used as a leave-on moisturiser
  - There is stronger evidence to encourage the use of deodorant

ISSUES TO CONSIDER
Are we providing skin care advice to patients based on traditional knowledge and a paternalistic approach to healthcare rather than on evidence?

In addition:
- The underlying cause of a radiation reaction is physiological and the extent is genetically predisposed
- There are intrinsic and extrinsic factors that affect individual patients
- Radiotherapy skin care study comparative data is difficult as often there is unclear method, differing patient allocation, the use of different skin assessment scales, and follow-up data
- Currently, some of the skin care provided may not actually alleviate the problem and indeed may even compound the effect
- There are a wide variety of products currently available. Careful assessment and justification is necessary before they are introduced for routine use.

RECOMMENDATIONS
- Standardisation of skin care education of all staff caring for patients receiving radiotherapy by dissemination of the guidance using a variety of educational methods
- Standardisation of advice given to patients on key topics such as health promotion interventions including nutritional advice and smoking cessation and care of their treatment area to reduce the likelihood and severity of friction and irritation to the skin
- Use of standardised assessment tools across all RT departments in the UK which are objective and consistent to understand how many patients are affected and to what level
- All RT departments to audit RISR locally and monitor the proportions of patients that develop different RTOG graded reactions across different treatment sites. This would enable improvement in the quality of information that can be given to patients; and to allow departments to monitor their own practice and compare across centres
- Consider the evidence on current products and start new high quality trials to investigate interventions for dry or moist desquamation enabling a more consistent approach for patients receiving radiotherapy and inform radiotherapy skin care guidelines
- Future research is required: High quality trials are urgently needed to evaluate factors such as wet versus dry shaving, the use of perfume and make-up during treatment and all new products as they become available, so the latter are not introduced in skin care regimes on an ad-hoc basis without evidence
- The introduction of decision tools to help patients make informed choices about RISR information.

REFERENCES