# Skin Toxicity following Post-Mastectomy Radiotherapy (PMRT) and its Impact on Quality of Life (QOL)

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## 1. Background

PMRT reduces the rate of breast cancer loco-regional recurrence by 65-75% and in high risk women it also improves survival [1,2]. Radiation Therapy Oncology Group (RTOG) Grade 2 acute skin toxicity is estimated to affect 37% of patients receiving PMRT [3]. This is experienced by the patient as tender or bright erythema, patchy moist desquamation and/or moderate oedema as shown in Figure 1 (bright redness, skin may feel tender, there may be some loss of skin surface with moist skin and/or they may have some swelling of skin). RTOG Grade 3 acute skin toxicity is estimated to affect 2% of patients receiving PMRT [3]. This is experienced by the patient as confluent moist desquamation as shown in Figure 2 (widespread loss of skin surface with moist skin). Acute skin toxicities can have an adverse effect on QOL.

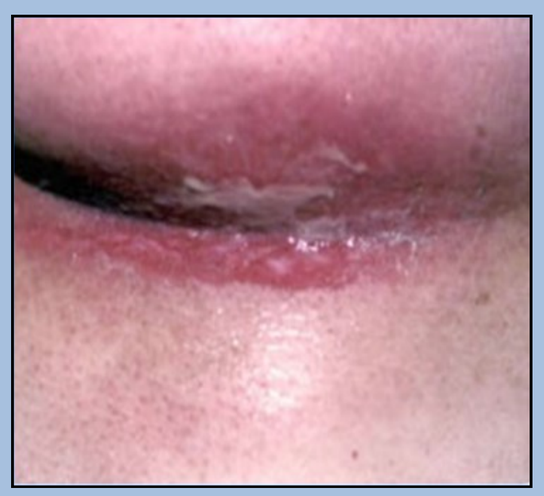

Figure 1

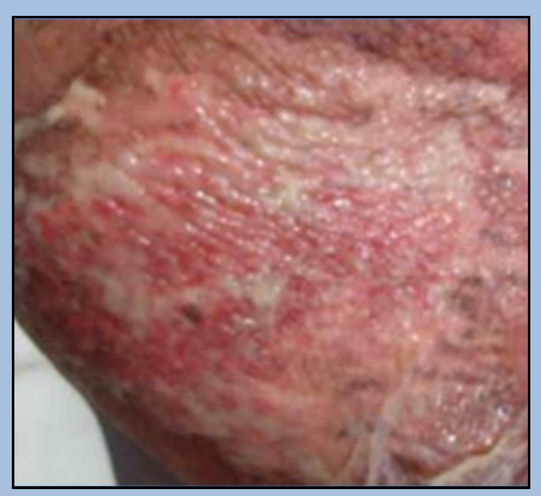

Figure 2

## 2. Aim

We undertook this project to obtain our department rates of acute skin toxicity during and after PMRT.

## 3. Quality Measure Indicators (QMI)

QMIs were collected for patients at the end of PMRT and for 6 weeks afterwards.

QMI 1: Patient assessment of RTOG skin reaction

QMI 2: If, when and from whom advice was sought regarding skin toxicity

QMI 3: Impact of skin toxicity on QOL

## 4. Method

We devised anonymous patient questionnaires and gave these to 30 consecutive PMRT patients to complete.

They were asked to grade their skin reaction on their last day of radiotherapy and again at 2, 4 and 6 weeks after radiotherapy. We included pictures such as Figures 1 and 2 to aid this grading.

We also asked whether they needed to contact anyone about their skin after the end of radiotherapy.

We asked them to score their pain/distress from their acute skin toxicity. We also asked about impact on wearing normal clothes and breast prostheses.

A pre-paid envelope was provided for patients to return the surveys once completed.

## 5. Results

We received questionnaires from 24/30 patients (80%).

QMI 1: Grade 2 toxicity was greatest at 2 weeks after PMRT and affected 46% of patients. By 6 weeks this had dropped to 8%. Grade 3 toxicity affected one patient (4%) at 2 and 4 weeks after PMRT. Full results are shown in Figure 3.

QMI 2: 50% of patients sought advice regarding skin reaction after the end of PMRT. They consulted treatment radiographers, their GP, their practice nurse and breast care nurses, amongst others.

QMI 3: 50% of patients had to stop wearing their prosthesis during or after PMRT and 48% felt unable to wear their normal clothing.

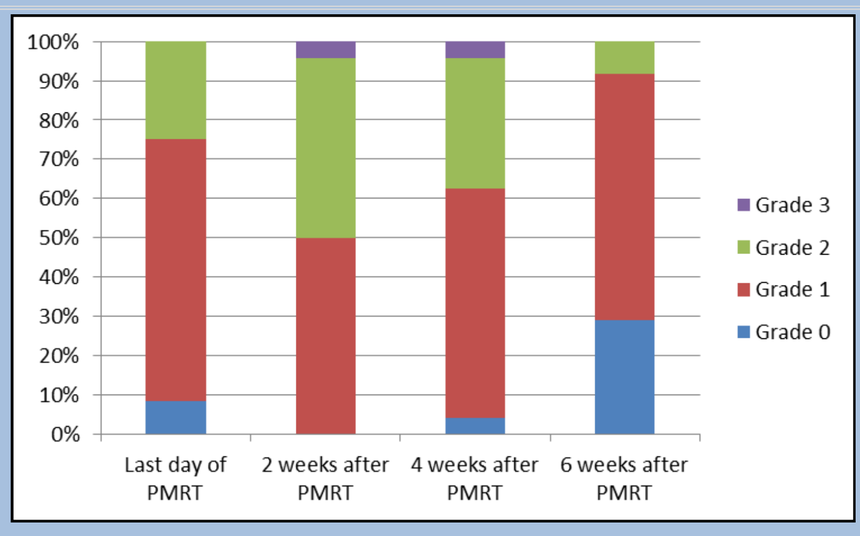


Figure 3

## 6. Conclusion

Our department rates of acute skin toxicity during and after PMRT appear broadly in line with those in the literature. Our rate of Grade 2 toxicity was 46% at 2 weeks after PMRT; this level of toxicity has been estimated to affect 37% of patients at any time during or after treatment [3]. This could reflect the small numbers in our project but we are keen to reduce our rates of toxicity if at all possible. We have shown that acute skin toxicity with PMRT has an adverse impact on QOL in our patients. We found that patients do need further advice regarding management of their skin toxicity after PMRT and that a consultation on the final day of treatment (as occurs at present) is not sufficient.

## 7. Further Work

We have started a follow-on project to assess whether routinely using topical StrataXRT reduces acute skin toxicity and improves QOL with PMRT. We plan to set up skin toxicity clinics for patients at up to 6 weeks after PMRT.

## 8. References

1. Overgaard M *et al*. Postoperative radiotherapy in high-risk premenopausal women with breast cancer who receive adjuvant chemotherapy. *N Engl J Med.* 1997;337(14):949.
2. Ragaz J *et al.* Adjuvant radiotherapy and chemotherapy in node-positive premenopausal women with breast cancer. *N Engl J Med.* 1997;337(14):956.
3. Yap ML *et al.* Outcomes in Patients Treated with Post-mastectomy Chest Wall Radiotherapy without the Routine Use of Bolus. *Clin Oncol (R Coll Radiol).* 2018 Jul;30(7):427-432.

## 9. Thanks

We would like to thank all the patients who took part in our project. We would also like to thank the treatment and review radiographers for discussing the project with patients and ensuring they had received the questionnaires.