

Acute Moist Desquamation in Breast Cancer Patients Treated with Hypofractionated vs Conventional Radiotherapy

Preliminary Results

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Acute Moist Desquamation (AMD) following radiation therapy (RT)¹⁻²

✓ 5-10% of patients
(after 4-5 weeks)

⇒ Compromises
both patients'
quality of life &

treatment outcomes &
treatment interruption/infection

AMD in skin fold



1. Fowble et al. In *Skin care in radiation oncology*. Springer 2016

2. Singh et al. *Am J Clin Dermatol* 2016; 17: 277-292

RT Fractionation Regimen³⁻⁴

- ✓ Dose/ fraction = one of the risk factor for skin reactions following RT
- ✓ In breast cancer patients post-lumpectomy, conventional RT (Conv-RT) = 25#2 Gray (Gy) + 8#2Gy
- ✓ Hypofractionated RT (Hypo-RT) => lower total dose divided into fewer fractions but with larger dose/ fractions

3. The Royal College of Radiologists. Radiotherapy dose fractionation 2016

4. Smith et al. Pract Radiat Oncol 2018; 8: 145-152

BACKGROUND & OBJECTIVES

RT Fractionation Regimen

- ✓ Hypo-RT shown equivalent to Conv-RT (survival, quality of life)⁵⁻⁶
- ✓ Larger dose/fraction may ↑ risk of AMD

↪ Compare the incidence of AMD between Hypo-RT and Conv-RT

5. Whelan et al. N Engl J Med 2010;362:513-20

6. Haviland et al. Lancet Oncol 2013; 14: 1086-94

- **Design:** Retrospective study
- **Population:**

1) Hypo-RT group (16*2.66 Gy + 5*2.5 Gy)

- ✓ 101 breast cancer patients undergoing local Hypo-RT in 2014 - 2015

Eligibility Criteria for Hypo-RT

- | | |
|-----------------|---------------------|
| ▪ Lumpectomy | ▪ No bolus material |
| ▪ Node-negative | ▪ No chemo |
| ▪ > 50 yrs | ▪ No brachytherapy |

➤ Population:

2) Conv-RT group (25*2 Gy + 8*2 Gy)

- ✓ 222 historical controls from previous study (treated 2012-2013)⁷
- ✓ Filtered out to match eligibility criteria of Hypo-RT group
- ✓ Total final sample: n = 89

➤ Endpoint: AMD incidence (*WHO* criteria)

PRELIMINARY RESULTS

1. Patients characteristics

Characteristics	Hypo-RT (n = 101)	Conv-RT (n = 89)	p ^a
Age	65 (9)	61 (7)	.002
Breast size (cm), M (^a)	21.5 (2.7)	20.7 (2.8)	.070
Small breast (< 20 cm)	30 (29.7%)	43 (48.3%)	.008
Medium breast (21-24 cm)	60 (59.4%)	38 (42.7%)	.021
Large breast (≥ 25 cm)	11 (10.9%)	8 (9.0%)	.66
Breast size (cm), M (^b)	21.5 (2.7)	20.7 (2.8)	.021

**Hypo-RT group older & more medium-sized breasted women
⇒ expect more AMD⁸**

^aIndependent

^bBreast size = tangential field separation (breast width, in cm, at the posterior border of the medial and lateral tangential beams; Hoopfer et al. Clin Breast Cancer 2015; 15: 181-90).

PRELIMINARY RESULTS

2. Incidence of AMD (1)

N (%) with RIMD per group and breast size

Breast Size ^a	Hypo-RT (n = 101)	Conv-RT (n = 89)	P (χ^2) (2-sided)
Small (< 20 cm)	3/30 (10%)	2/43 (4.7%)	.373
Medium (21-24 cm)	8/60 (13.3%)	7/38 (18.4%)	.496
Large (> 25 cm)	2/11 (18.2%)	1/9 (11.1%)	.727

Despite group differences in breast size distribution \Rightarrow AMD incidence not significantly different between groups

Note: Results unchanged with other criteria for breast size

Total

^a Breast size distribution based on exam

PRELIMINARY RESULTS

2. Incidence of AMD (2)

Predictive Factors (Univariate Logistic Regression Analysis)

Characteristics	Odd Ratio	95% CI	p
Regimen (Hypo-RT vs Conv-RT)	1.167	0.934 – 1.452	.730
Age	0.985	0.934 – 1.039	.588
Breast size (cm) ^a	1.163	1.001 – 1.352	.049
Breast Plan			.003 .001

^aBreast size = ta
medial and late

border of the
5: 181-90).

⇒ Type of regimen (Hypo-RT vs Conv-RT) does not predict (/ affect) the incidence of AMD

CONCLUSIONS

- **Limitations > Retrospective design**
(e.g., unavailable follow-up data/ PROMs, ...)

⇒ **Despite these limitations,
data show no effect of Hypo-
RT (vs Conv-RT) on the
incidence of AMD**

- **To-be-confirmed with controlled study**

Thank you for your attention

