A CLINICAL STUDY COMPARING A HYDROACTIVE COLLOID GEL WITH A DEXPANTHENOL CREAM FOR THE **TREATMENT OF SKIN REACTIONS IN BREAST IRRADIATION**

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PURPOSE/OBJECTIVES

Dermatitis is a frequent side effect of radiation therapy (see Figure 1). Optimal skin hydration is widely accepted to prevent radiation dermatitis but there is no general consensus on which hydrating agent to use,1 although the use of hydroactive colloid gels has been recommended.2,3 The objective of this retrospective study was to **compare the efficacy of a hydroactive colloid gel** (Flamigel®) **and a dexpanthenol cream** (Bepanthol®) **in preventing the development of radiotherapy-induced moist desquamation**.

MATERIALS/METHODS

Data from two cohorts of patients undergoing radiotherapy for breast cancer at the Limburg Oncology Center was retrospectively analysed. The first cohort (Sept.2009-2010) **applied the dexpanthenol cream throughout their radiation therapy** (3 times a day, every day). The second cohort (Sept. 2010-2011) **applied the dexpanthenol cream during 12 days and replaced it from day 13 by the hydroactive colloid gel** (i.e., after a received cumulative radiation dose of 26 Gy). Radiation treatment (technique, total dose, and equipment) was the same for the two cohorts. Patients were further categorized according to their breast size (i.e., distance between the two entrance points of the beams < or ≥ 20 cm), which is a well-known risk factor for radiation dermatitis.4 The presence of moist desquamation was recorded as the first signs appeared. Two-sample proportion tests were performed to compare the efficacy of the two treatments.

The dexpanthenol group included 292 patients and the hydroactive gel group, 281 patients. There were significantly more patients with large breast size in the hydroactive gel than in the dexpanthenol group (see Table 1). Consistent with the literature, the overall incidence of moist desquamation was significantly greater in patients with large than with small breast size (32% vs 13%, resp., $p < .0001$). Yet, despite this, **the overall incidence of moist desquamation was significantly lower (by almost half) in patients who applied the hydroactive gel than in those who applied the dexpanthenol cream** (see Table 1.). Finally, in patients with small breast size, there was no significant difference between the two treatments on the incidence of moist desquamation. However, **for patients with large breast size, the hydroactive gel significantly decreased the risk of developing moist desquamation** (see Table 1).

Table 1. Number (N) and proportion (%) of patients and incidence of moist desquamation per group and breast size.

	Group dexpanthenol		Group hydroactive gel	
Total N	292		281	
N (%) Small Breast size	121 (41.4%)		93 (33.1%)*	
N (%) Large Breast size	171 (58.6%)		188 (66.9%)*	
N (%) with moist desquamation	**92 (31.50%)**		**49 (17.43%)*** **	
	Small breast size		**Large breast size**	
	Group dexpanthenol (N = 121)	Group hydro-active gel (N = 93)	Group dexpanthenol (N = 171)	Group hydro-active gel (N = 188)
N (%) with moist desquamation	**18 (14.9%)**	**9 (9.7%)**	**74 (43.3%)**	**40 (21.3%)*** **

Note. *Small/ Large breast size = distance between the two entrance points of the beams < or ≥ 20 cm.*
**p < .05, ***p < .0001 (two-sample proportion tests, one-tailed)*

CONCLUSIONS

The use of a hydroactive colloid gel (as compared with a dexpanthenol cream) significantly reduces the risk of radiation dermatitis (by almost half), particularly in patients with larger breast size who are at higher risk of developing moist desquamation.

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