Use of two gels for acute radiation dermatitis after radiotherapy in head and neck cancer patients

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Introduction

Head and neck cancer patients frequently develop radiation dermatitis during radiotherapy that can last up to 3 months after the end of radiotherapy.

Radiation dermatitis can manifest as hyperpigmentation or erythema, dry and moist desquamation.

The development of radiation dermatitis can negatively affect patients' survival, in addition to having an impact on patients' quality of life.

Chamomile has pharmacological properties in its flower, highlighting the chemical constituents terpenoids, flavonoids, highlighting α-bisabolol, quercetin, apigenin and coumarins.

Liposomes are biocompatible with the skin and have been widely studied as a drug delivery system. Liposome formulations can improve skin permeability and increase local accumulation of active substances in the skin, reducing systemic absorption.

This study compared the use of liposomal gel with and without chamomile for the occurrence of radiation dermatitis after radiotherapy in head and neck cancer patients.

Methods

Double-blind randomized clinical trial.

The participants undergoing radiotherapy for head and neck cancer were randomized (Liposomal gel or chamomile liposomal gel) and used the allocated product during radiotherapy sessions.

The occurrence of radiation dermatitis after the end radiotherapy was evaluated by GRAL - *Graduação da Radiodermatite Aguda Scale*. The skin was evaluated with an average of eight days after the end of radiotherapy.

This study was performed at the Unit of High Complexity Oncology of the University Hospital of Brasília, Brazil.

Clinical Trials Registration (REBEC): RBR-92cts3.

Figure 1. Liposomal gel and chamomile liposomal gel

Results

51 head and neck cancer patients were evaluated, among which 68% (n=17) developed radiation dermatitis after the end of radiotherapy in the chamomile liposomal gel and in 50% (n=13) in the liposomal gel (p=0.26).

The moist desquamation (several radiation dermatitis) occurred in 4% (n=1) in the chamomile liposomal gel and in 11.5% (n=3) in the liposomal gel (p=0.61).

The results demonstrate that the use of gels resulted in milder degrees after the end of radiotherapy in both groups.

Table 1. Occurrence of grades of radiation dermatitis after the end of radiotherapy

Outcomes	Chamomile liposomal gel (n=25)	Liposomal gel (n = 26)	p value*
Radiation dermatitis, n (%)	17 (68.0)	13 (50.0)	0.26
Erythema, n (%)	16 (64.0)	12 (46.2)	0.27
Dry desquamation, n (%)	8 (32.0)	9 (34.6)	1.00
Moist desquamation, n (%)	1 (4.0)	3 (11.5)	0.61

*p value: Fisher's exact test

Conclusions

The results show a lower occurrence of radiation dermatitis was lower in gel liposomal group compared to chamomile liposomal gel, but no statistically significant differences in outcomes were found.

The results show a lower occurrence of dry and moist desquamation in the chamomile liposomal gel group compared to liposomal gel, reinforcing the importance of evaluating the potential interventions for the management of this radiotoxicity after radiotherapy, considering the occurrence of severe radiation dermatitis and associated risk factors.

References

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