

The Use of Pure Silver-Plated Wound Dressings for the Management of Radiation Dermatitis in Head and Neck Cancer Patients

Cody R Kilar, DO, PhD, J. Christopher Knoth, MD, Alexis Warden, PA-C, and David A Clump, MD, PhD
Department of Radiation Oncology, West Virginia University Cancer Institute, Morgantown, West Virginia

WVU Cancer Institute

Significance

- Acute radiation dermatitis (RD) affects over 90% of patients receiving radiotherapy for cancer, making it one of the most common side effects.
- Radiotherapy causes structural tissue damage to both the epidermis and dermis, increasing the risk for infection and delayed wound healing.
- Patients with head and neck cancer are at particularly high risk because of the higher radiation doses required for prevention or treatment.
- While RD is widely recognized as a significant clinical issue, there is currently no gold standard for treatment.

Purpose

The purpose of this study was to evaluate the use of pure silver-plated wound dressings for the management of RD in head and neck cancer patients receiving radiotherapy.



RD on a patient undergoing treatment for H&N cancer

Methods

- Between 9/6/2023 and 10/30/2023, 7 patients undergoing definitive treatment for head and neck cancers, consisting of oropharyngeal, oral cavity, nasopharynx and laryngeal, were evaluated.
- Pure silver-plated wound dressings were provided at the onset of therapy or once RD was observed and continued without interruption throughout the duration of radiotherapy.
- Patients were instructed to keep the dressings in place continuously, except for when bathing or during treatment.
- The pure silver-plated wound dressings were replaced weekly by the clinical team during on-treatment visits, and NCI CTCAE version 5.0 for adverse event reporting was used to quantify RD.



Pure silver-plated wound dressing application for patient undergoing treatment for H&N cancer

Results

- This initiation evaluation included 7 patients.
- One patient discontinued the trial early due to fitment issues and developed grade 1 RD upon completion of radiotherapy.
- Grade II RD was observed in one patient around laryngectomy without RD in bilateral neck.
- Grade II RD was reported in one patient despite compliance.
- In the other 4 patients, no RD was observed.

Conclusions

- In this limited sample of high-risk patients, the use of pure silver-plated wound dressings appeared to reduce the incidence of RD in patients receiving radiotherapy for the treatment of head and neck cancer.
- Patient who experienced grade II RD despite compliance had significant weight loss during RT, which likely effected dose distribution, thus leading to more toxicity.
- Data collection on additional patients is continuing and will be reported at a later date.

References

- Hegedus, Fanni, Laju M. Mathew, and Robert A. Schwartz. "Radiation dermatitis: an overview." *International journal of dermatology* 56.9 (2017): 909-914.
- Leventhal, Jonathan, and Melissa Rasar Young. "Radiation dermatitis: recognition, prevention, and management." *Oncology (08909091)* 31.12 (2017).
- Rosenthal, Amanda, Rachel Israilevich, and Ronald Moy. "Management of acute radiation dermatitis: a review of the literature and proposal for treatment algorithm." *Journal of the American Academy of Dermatology* 81.2 (2019): 558-567.
- Zasadziński, Konrad, Mateusz Jacek Spalek, and Piotr Rutkowski. "Modern Dressings in Prevention and Therapy of Acute and Chronic Radiation Dermatitis—A Literature Review." *Pharmaceutics* 14.6 (2022): 1204.

Contact: crkilar@hsc.wvu.edu

