Scalp Cooling for Chemotherapy-Induced Alopecia in Patients of Color: An Ongoing Clinical Trial

Warner Robinson, DDS1, Beth McLellan2, MD
1 Medical Student, Vagelos College of Physicians and Surgeons, NYC, NY
2 Chief and Associate Professor of Dermatology, Department of Dermatology, Montefiore Hospital, Bronx, NY

INTRODUCTION AND OBJECTIVE

- Chemotherapy-induced alopecia (CIA) is one of the most traumatic side effects of chemotherapy with an incidence of 65%.
- Hair loss can negatively impact individual perceptions of appearance, body image, sexuality, and self-esteem.
- 47% of patients consider hair loss to be the most traumatic aspect of chemotherapy and 8% would even decline chemotherapy for fear of hair loss.
- Prior studies have found scalp cooling (SC) to be highly effective in preventing CIA.
- However, minority representation was largely limited in completed trials.
- A recent study found that SC devices are less efficacious in patients with skin of color (SOC), likely because SOC patients have predominantly type 3 (curly) and 4 ( kinky) hair, which tend to become bulkier when wet and can interfere with SC cap fitting.
- Objective: The purpose of this study is to evaluate hairstyling techniques aimed at increasing efficacy of SC cooling in the prevention of CIA in SOC patients.

MATERIALS AND METHODS

- This is an ongoing single-institution, prospective open label study being conducted at Montefiore Einstein Cancer Center.
- Participants can elect to receive either the intervention (SC with water- conditioner emulsion and hairstyling to minimize hair volume and increase cooling cap to scalp contact) or no intervention (no SC).
- Aimed enrollment is 41 patients with types 3 or 4 hair undergoing chemotherapy for breast cancer, with 27 in the experimental group.
- Hair loss will be determined by hair counts and grading via CTCAE v5.0.
- Patient distress will be measured by the CADS questionnaire.
- Hair counts will be analyzed using T-test and CTCAE via Fisher's exact test.
- Multivariate logistic regression analyses will be performed to determine effect of SC after adjusting for potential confounders.

RESULTS

Figure 2: Patient having cooling cap and cover fitted prior to scalp cooling

Figure 3: Grade 1 alopecia (hair loss <50% from baseline) post Cycle 2 of Taxotere + Cyclophosphamide (TC) regimen

Figure 4: Grade 1 alopecia (hair loss <50% from baseline) post Cycle 3 of TC regimen

Figure 5: Grade 1 alopecia (hair loss <50% from baseline) post Cycle 4 (final) of TC regimen

DISCUSSION

- Study still ongoing with 5 patients enrolled to date.
- Two patients that completed intervention had good preservation of hair (< 50% hairless from baseline) using the proposed study technique.
- Given the known disparities in cancer outcomes between White and Black breast cancer patients and the potential for CIA to contribute to such disparities, studying methods to make scalp-cooling efficacious in all patients is imperative.
- The history of SC research emphasizes the importance of diverse representation in clinical trials.

CONCLUSION

- SOC patients have been underrepresented in prior SC studies. This ongoing trial aims to show that SC is efficacious in preventing CIA utilizing using a water-conditioner emulsion and hair styling to minimize hair volume and increase cap fit in in patients of SOC with type 3 and 4 hair.

REFERENCES