

ROUNDTABLE

Conversation led by Richard Paxman with Dr Jyoti Bajpai, Dr Andrew Collett, Dr Asma Dilawari, Dr Nikolaos Georgopoulos, Professor Annie Young, Dr Julie Nangia, and Dr Corina van den Hurk. March 2022.

KEY DISCUSSION POINTS

- Scalp cooling tolerability and efficacy is well established, now it is time to look at more specific determinants of outcome
- Many areas require further investigation to ensure that scalp cooling can be proven to be effective for more diverse populations, and protocols can be optimized to ensure the findings can be put into practice in clinic
- Lab based research to understand chemotherapy and the impact of scalp cooling at a cellular level is the key to unlocking more efficacious treatment, especially in scenarios which are more challenging

What Next? The Future of Scalp Cooling Trials and Research

‘WE NEED MORE PEER TO PEER SHARING THROUGH CONFERENCES AND GRAND ROUNDS. WE NEED TO LOOK AT RESEARCH INTO INCREASING EFFICACY IN UNDER-SERVED POPULATIONS, DIFFERENT HEAD SHAPES, AND ANTHRACYCLINES’ - Dr Julie Nangia

Research into scalp cooling to reduce chemotherapy-induced alopecia has largely been focused on efficacy and safety for many years, with randomized controlled trials and meta-analysis research being carried out all over the globe. With safety well established and efficacy rates detailed for a large quantity of drug regimens via the Dutch Scalp Cooling Registry, is it time to push for more innovative and far reaching areas of research and discovery? Can we identify the gaps that need to be addressed?

THERE IS A NEED FOR COLLABORATIVE, LARGE RANDOMIZED TRIALS ACROSS VARIOUS COUNTRIES AND SITES - INCLUDING MORE HAIR TYPES, SOLID TUMORS, AND PATIENT POPULATIONS’ - Dr Jyoti Bajpai

There is a plethora of established data on efficacy when it comes to scalp cooling, but we often see repetition as a result of institutions wanting to

demonstrate the standard of care they are providing and to prove to peers that scalp cooling is worth offering. It is now being proposed that conducting collaborative multi-center trials will help to increase diversity of patient population and elevate research through larger data sets.

Additionally, there are distinct areas of complexity and nuance that scalp cooling trials need to take into consideration, which can be challenging, but must be integrated into trial design to ensure advancement. Considerations include:

- Developing a new, detailed approach to measuring hair loss (use of a wig or head covering is now an outdated and inaccurate measure of success)
- Closer consideration of patients of color and the challenges faced around hair preparation and cap fit protocols to ensure efficacy
- Variations in head shapes across the globe and the impact this has on cap fit
- The variation in protocols (workflows) between institutions and the learning curve in scalp cooling usage for clinical teams

- Variations in patients’ ability to access supportive guidance and their ability to self-educate and advocate
- The lack of an adequate quality of life (QoL) scale that reflects the impact of chemotherapy-induced alopecia, and the need for a global consensus on the use of a specific scale for QoL and hair loss
- Addressing misconceptions that scalp cooling won’t work with anthracycline regimens, which may prevent the next steps in improving efficacy such as reducing cooling temperatures and extending cooling times

‘FROM WHAT WE HAVE SEEN IN THE LAB – TEMPERATURE IS SO IMPORTANT, AND IT CAN MAKE SUCH A DIFFERENCE’ - Dr Nikolaos Georgopoulos

Investigations within the laboratory is fundamental to our understanding of what chemotherapy does at a cellular level, and therefore the areas that need to be addressed to improve scalp cooling outcomes. It is evident from the work conducted at the Paxman Research & Innovation Centre at the University of Huddersfield, that temperature is fundamental to positive outcomes and that individual scalp temperature has a huge impact on efficacy. Reduction in temperature does produce better results, but also limits tolerability and therefore viable usage, therefore the next steps are to look at a pharmacological intervention in the form of a topical agent, which can enhance efficacy in suboptimal cooling conditions.

Furthermore, positive moves are already being made with several pieces of research in early stages, or having been completed, that will help to move scalp cooling practice on. There are studies underway to examine scalp cooling efficacy for patients with types 3 & 4 hair, and the role that hair preparation workflows/protocols will play, and the development of a QoL scale that will truly reflect the impact that hair retention during chemotherapy can have.

This discussion group concluded that there are key research takeaways which highlight the areas requiring more investigation, including:

- The importance of drug sequencing in relation to efficacy – specifically, does the use of taxanes before anthracyclines have a meaningful impact on hair retention?
- The use of scalp cooling for metastatic patients and with novel therapies
- Is varying cooling times valuable? Being mindful that shorter times are better for patients and clinics, but that longer times may have an effect on hair retention

Fundamentally, the greater and more nuanced the catalog of research and trials exploring the positive impact of scalp cooling and ways to increase efficacy, the more likely we are to increase access, insurance coverage and ultimately usage.

FURTHER READING

[Visit The Scalp Cooling Study Library.](#)

[Nangia J, et al. *Effect of a Scalp Cooling Device on Alopecia in Women Undergoing Chemotherapy for Breast Cancer: The SCALP Randomized Clinical Trial*. JAMA. 2017 Feb 14;317\(6\):596-605.](#)

[Dunnill C, et al. *Cooling-mediated protection from chemotherapy drug-induced cytotoxicity in human keratinocytes by inhibition of cellular drug uptake*. PLoS One. 2020 Oct 15;15\(10\):e0240454.](#)

[Bajpai J, et al. *“Randomised controlled trial of scalp cooling for the prevention of chemotherapy induced alopecia”*. Breast. 2020 Feb;49:187-193.](#)

[Dilawari A, et al. *Does Scalp Cooling Have the Same Efficacy in Black Patients Receiving Chemotherapy for Breast Cancer?* Oncologist. 2021 Apr;26\(4\):292-e548.](#)

[Araoye EF, Stearns V, Aguh C. *Considerations for the Use of Scalp Cooling Devices in Black Patients*. J Clin Oncol. 2020 Oct 20;38\(30\):3575-3576.](#)

[Ohsumi S, et al. *Prospective study of hair recovery after \(neo\) adjuvant chemotherapy with scalp cooling in Japanese breast cancer patients*. Support Care Cancer. 2021 Oct;29\(10\):6119-6125.](#)

[Information on the International Chill Registry.](#)



Scan to watch the opening discussion key points