

PAXMAN^o

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7,424 scalp-cooled patients in total



68 hospitals included in the study



24 chemotherapy regimens included



A cumulative study with data from 2006–2019

The Scalp Cooling Registry

The Largest Real-World Multi-Centre Analysis of Determinants for Scalp Cooling Efficacy

What is the **Scalp Cooling Registry**?

The Scalp Cooling Registry stands as the largest real-world, multicentre study focused on identifying the determinants of scalp cooling efficacy. Spanning over thirteen years (2006–19), this extensive registry includes data from 7,424 patients who underwent scalp cooling across 68 hospitals. By examining patient outcomes across 24 different chemotherapy regimens, the study aims to provide valuable insights into the determinants that affect efficacy of scalp cooling to mitigate chemotherapy-induced alopecia (CIA).

To date, it is the best snapshot we have of scalp cooling in the real world and a significant number of patients from this study used the Paxman Scalp Cooling System.

Results of the Dutch scalp cooling registry in 7424 patients: analysis of determinants for scalp cooling efficacy

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Methods and Data Collection

All patients eligible for scalp cooling during the time of the three cohorts were asked to participate regardless of whether they had previously received scalp cooling treatment for CIA or not. In order to thoroughly understand the factors influencing scalp cooling success, data was collected from both nurses and patients via questionnaires for a wide range of variables to assess.

Assessed Variables



Demographics

Age, gender, cancer type and treatment setting



Chemotherapy details

Regimens, doses and infusion times



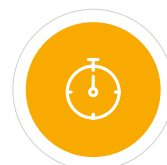
Medical background

Presence of liver metastases, previous chemotherapy, previous hair loss or scalp cooling



Hair characteristics

Hair length, density, ethnic hair type, any prior chemical manipulation



Scalp cooling protocols

Pre- and post-infusion scalp cooling times, hair dampening practices, tolerability

The latest cohort (2013-2019) included additional information

- Anthropometric characteristics (height and weight)
- Lifestyle tendencies
- Pre-treatment greying, natural shedding patterns, hair colour and potential technical problems with the scalp cooling machine
- Documenting changes in growth, texture, colour and condition of hair, barriers in access to scalp cooling, rating the expertise of scalp cooling provided by the nursing staff and progressive evaluation of satisfaction and insecurity about the result to date.

Evaluation Criteria

01 Patient-reported head covering usage

Primarily, the evaluation criteria was measured using patient-reported preferences to wear a head covering (a wig or scarf) during their last reported scalp cooling session. A head covering is commonly used as the most important outcome measure of efficacy because it represents perceived satisfaction with scalp cooling.

02 WHO alopecia scores

Additionally, the World Health Organisation (WHO) alopecia scores were used to gauge the extent of hair retention. The WHO score ranges from 0 -3 (0: none, 1: minimal, 2: severe and 3: total alopecia).

If a head covering was not needed, the treatment was considered efficacious despite the WHO score.

Patient Statistics

87%
female

73%
breast cancer

77%
chemo naïve

61%
(neo-) adjuvant

7424
patients
—
68 locations
24 regimens

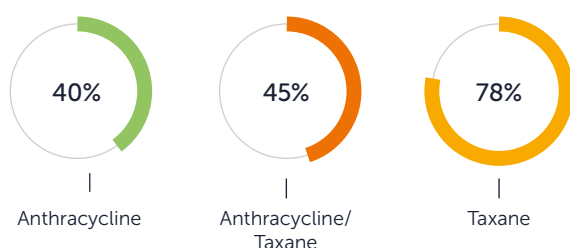
Average
patient age
55

Ages
ranged from
18-98

Analysis and Results

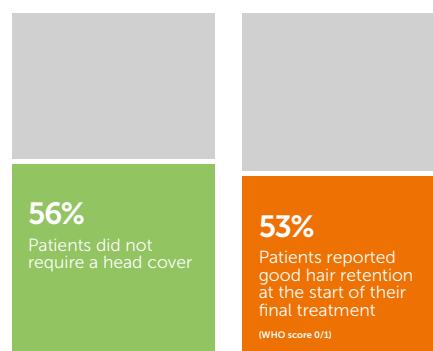
The analysis of the Scalp Cooling Registry data yielded significant findings that shed light on the effectiveness of scalp cooling and the factors influencing its success.

Taxane regimens presented **highest levels of efficacy**

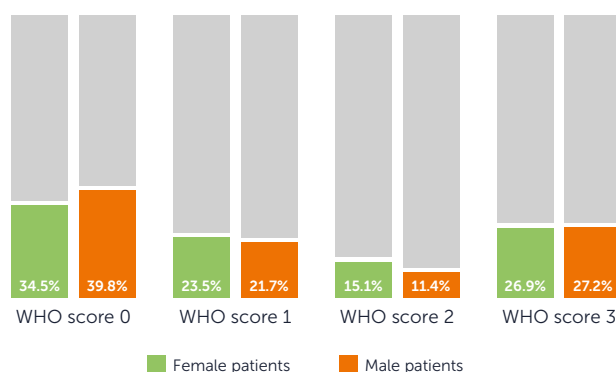


The results found that **chemotherapy regimen and dosage was the only ascertainable determinant for scalp cooling efficacy** and that all other variables in the study had no identifiable influence.

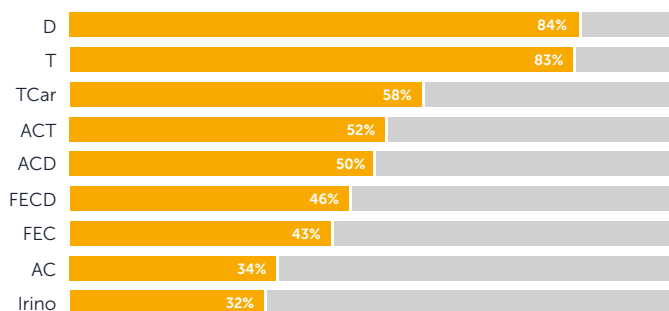
The Scalp Cooling Registry found the following **results on overall efficacy**



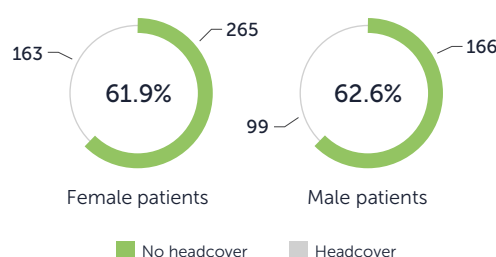
Severity of Hair Loss*



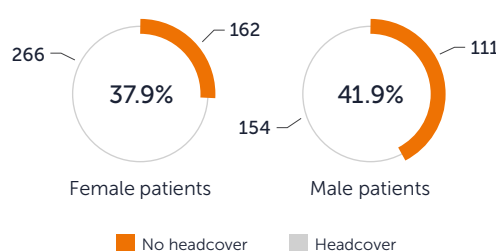
Percentage no headcover use by chemotherapy regimen for all cancer types



Use of a headcover*



Premature cessation of scalp cooling*



Gender **did not** play a significant role in the outcomes of scalp cooling success, tolerability or premature cessation of scalp cooling.

Smoking and drinking habits **did not** have a significant impact on **head covering use** or the **WHO score** when corrected for gender, age, hair type, cancer type, or chemotherapy regimen.

*The study **did not** identify any other patient characteristic or lifestyle factor as a generic determinant influencing scalp cooling success.*

*Excluding breast, gynaecological and prostate cancers

Conclusions and Implications for Practice



Efficacy

Scalp cooling is effective for the majority of patients with no immediate need for changes in current practice.



Gender equality

Both male and female patients benefit equally from scalp cooling. Scalp cooling should be offered to males.



Chemotherapy regimen

The type of chemotherapy regimen is a crucial determinant of scalp cooling success, yet many influencing factors remain unidentified.



Continuation of treatment

Patients should be encouraged to continue scalp cooling, even if the result is not satisfactory; in particular during AC.



Unknown determinants

Scalp cooling success isn't determined by specific patient, cancer, or treatment characteristics. Variability in outcomes among patients on the same regimen suggests there are still unknown factors, highlighting the need for further research.

Implications for Practice

Medical personnel involved in patient care need to be aware that males are also eligible for and benefit from scalp cooling. In addition, comprehensive standardized registration with more extensive outcome evaluation of hair loss and recovery is essential for long-term international protocol optimization and revealing the true determinants of scalp cooling efficacy to accelerate advances for individual patient care.

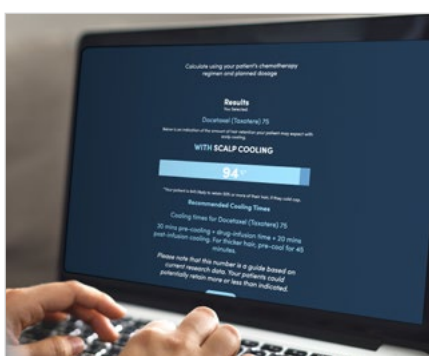


Scalp Cooling Guide: Efficacy, Data and Cooling Times

The valuable data collected from the Scalp Cooling Registry has played a pivotal role in the creation of the Scalp Cooling Guide for clinicians. This comprehensive guide offers detailed information on scalp cooling efficacy, providing clinicians with evidence-based protocols on cooling times for specific chemotherapy drug regimens and dosages.

The Paxman Scalp Cooling Guide is an essential tool for healthcare providers, enabling them to deliver more consistent and effective scalp cooling care based on robust, real-world evidence.

[Speak to your Paxman representative](#)



The Scalp Cooling Outcomes Calculator

This same data also acts as the basis for Paxman's Scalp Cooling Outcomes Calculator. An online tool, which allows both clinicians and patients to enter details of the chemotherapy regimen and dosage (if known) and find out the estimated chances of retaining half of their hair. This estimate is based on the 7,424 people studied in the 3 cohorts of the Scalp Cooling Registry and helps patients set realistic expectations for their treatment.



scalpcoolingstudies.com/efficacy-calculator



Calling for an International Registry

An international registry would help to more accurately determine discrepancies in scalp cooling between countries and how country-specific factors influence outcomes, such as: availability, accessibility and affordability. The Scalp Cooling Registry also acknowledges the lack of hair type and ethnic representation within the study.

An international registry would increase the diversity of the cohort, addressing disparities and enhancing our understanding of scalp cooling across different healthcare settings.

It would also aim to help increase scalp cooling efficacy, improve clinical reviews, educate providers and further the understanding and recognition of the impact of hair loss for the patient.