

Optimal pre-infusion cooling time in patients treated with chemotherapy and scalp cooling

Authors: M.M.C. Komen¹, C.H. Smorenburg¹, W.P.M. Breed², C.J.G. van den Hurk², J.W. Nortier³

¹ Medical Centre Alkmaar, The Netherlands, ² Comprehensive Cancer Centre South (CCCS), The Netherlands, ³ Leiden University Medical Centre, The Netherlands
www.mca.nl & www.scalpcooling.nl

Introduction

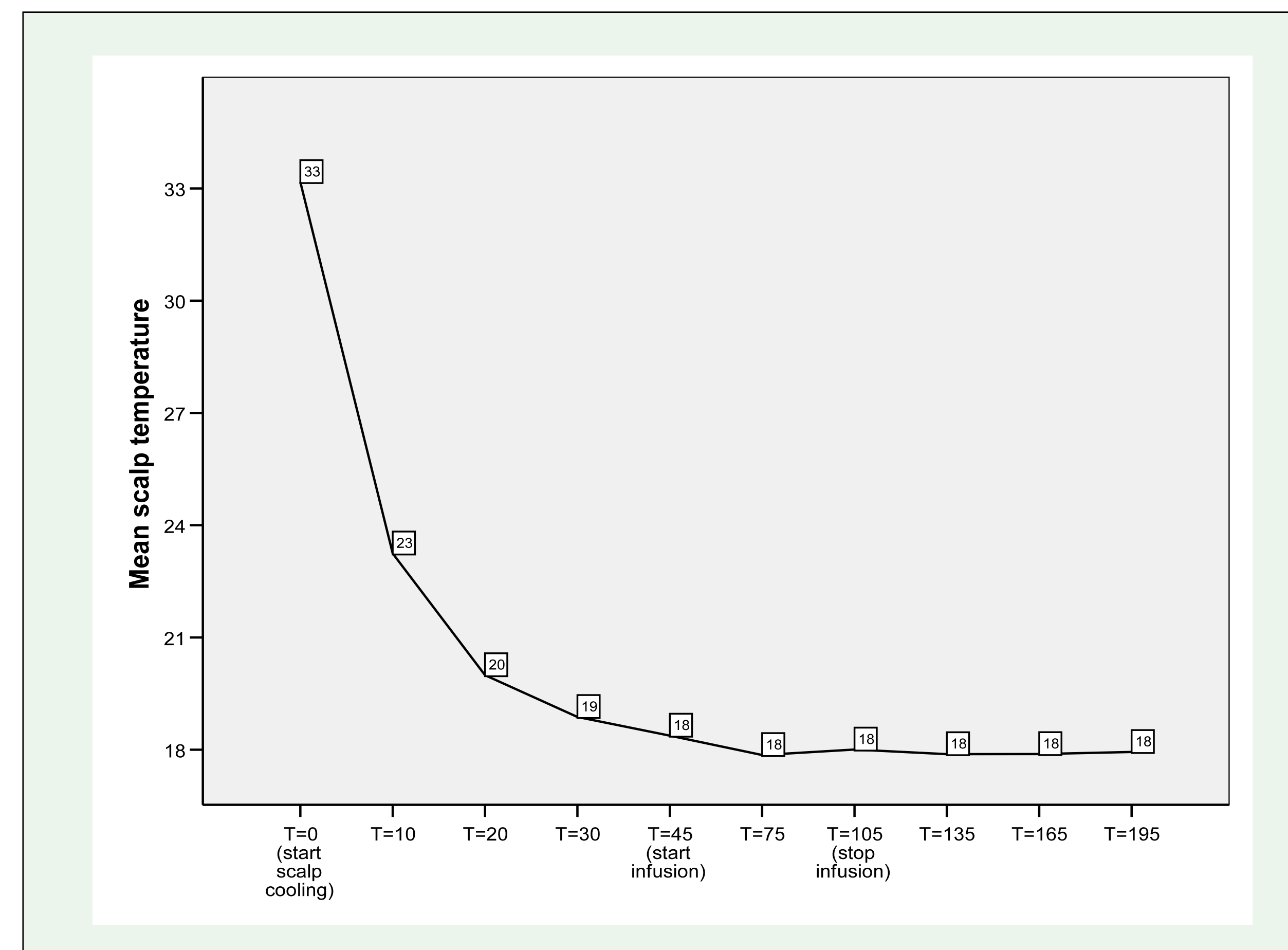
In cancer patients chemotherapy-induced alopecia remains one of the most frequently encountered side-effects of treatment and is experienced as one of the side-effects with the most impact. Scalp cooling can be a safe and effective method of preventing chemotherapy-induced alopecia in medical oncology. Results vary and depend on many factors, such as type and dose of chemotherapy and cooling times of the scalp before and after infusion of chemotherapy.

Aim of this study

To define the optimal pre-infusion cooling time in scalp cooling during chemotherapy.

Methods

- Patients with early breast cancer
- Treated with 6 cycles of adjuvant FEC chemotherapy (5-fluorouracil 500 mg/m², epirubicin 100 mg/m², cyclophosphamide 500 mg/m²) or AC chemotherapy (adriamycin 60 mg/m², cyclophosphamide 600 mg/m²)
- Scalp cooling using the Paxman® PSC1 system
- Measuring scalp skin temperature at both temporal areas
- Using thermocouples attached to the skin
- Using a non pre-cooled cap
- Informed consent



Results

Since July 2010, 27 patients have been examined in this pilot study. The mean scalp skin temperature at the start of scalp cooling was 34°C. After 10, 20 and 30 minutes of scalp cooling, the mean temperature decreased to 23, 20 and 19 °C, respectively. After 45 minutes a constant scalp skin temperature of 18°C (range 12-27°C) was reached, throughout the total cooling period.

Conclusion

In patients treated with scalp cooling using the Paxman® PSC1 system, scalp temperature reaches a constant level after 45 minutes. As no further reduction in temperature occurs, a pre-infusion cooling time of 45 minutes seems optimal if a non pre-cooled cap is used.

