

Scalp cooling in cancer patients receiving chemotherapy in the Netherlands

C.J.G van den Hurk^{1,2} W.P.M. Breed² J.W.W. Coebergh² L.V. van de Poll-Franse² J.W.R. Nortier¹
¹Leiden University Medical Centre, Leiden ²Comprehensive Cancer Centre South, Eindhoven

Background

- Severe hair loss is very common in chemotherapy patients
- Chemotherapy-induced alopecia is distressing
- Scalp cooling during chemotherapy:
 - practised for many years in Europe, however hardly registration of results and research to improve results
 - minimal and reversible side effects
 - the Netherlands: scalp cooling offered in
 - 2004: 4 hospitals
 - 2007: 35 hospitals (1 out of 3)

Methods

- 3 studies originating in community hospitals:
 - Study 1 **Impact of post-infusion cooling times in 3-weekly docetaxel regimen:**
 - randomised trial in 10 hospitals
 - 1st phase: post cooling 90 minutes
 - 2nd phase: randomisation post cooling 45 vs 90 minutes
 - Study 2 **Recording of scalp cooling methods and results in all chemotherapy regimens**
 - survey in 21 hospitals
 - Study 3 **Quality of life (QOL) and body image in relation to chemotherapy-induced hair loss in breast cancer patients**
 - Questionnaire survey in 12 hospitals
 - Questionnaires: t1= before initiation, t2= 3 weeks and t3= 6 months after finishing chemotherapy
- Scalp cooling with Paxman system
- Data collection by oncology nurses

Results

Study 1 Impact of post-infusion cooling times

- 34% of included patients are males
- 1st phase: 90 minutes: 82% (n=38) no head cover/ wig
- 2nd phase, preliminary results:
 - 45 minutes: 86% (n=14) no head cover
 - 90 minutes: 69% (n=16) no head cover

Study 2 Registration of scalp cooling methods and results

Chemotherapy regimen	% no head cover/ wig	n= (n min=10)
FEC-high dose (epirubicine≥90 mg/m ²)	55	225
Doxorubicin Cyclophosphamide	37	27
5FU Doxorubicin Cyclophosphamide	64	11
Irinotecan	45	11
Taxol	55	11
Taxol Carboplatin	27	11

Study 3 QOL and body image in relation to chemotherapy-induced hair loss

- impact of hair loss ranked in top 3 of most distressing side effects of chemotherapy in scalp cooled and not scalp cooled patients at t=1, 2 and 3
- QOL and body image: trend for successfully scalp cooled patients (n=30) > not cooled patients (n=168) > unsuccessfully scalp cooled patients (n=28)



Interpretation

Scalp cooling:

- received a great impulse in the Netherlands (now 35 hospitals)
- worthwhile supportive care
- generally positive outcomes, depending on chemotherapy schedule (although based on small numbers of patients in most groups)
- optimal post-infusion cooling time in docetaxel regimen is still uncertain
- unique participation of hospitals in comprehensive registration of results
- there is a need for clinical research to improve knowledge about indications and methods of cooling and for more general use

Acknowledgements

Special thanks to medical doctors, nurses and patients of hospitals participating in the 3 studies mentioned above

Albert Schweitzer, Dordrecht; Amphia, Breda; Catharina, Eindhoven; Diaconessen, Utrecht; Elkerliek, Helmond; Gelre, Apeldoorn; Haga, Den Haag; Haven, Rotterdam; Jeroen Bosch, 's-Hertogenbosch; Leids Universitair Medisch Centrum; Lievensberg, Bergen op Zoom; Máxima Medisch Centrum, Eindhoven/Veldhoven; Medisch Centrum Alkmaar; Medisch Centrum Rijnmond Zuid, Rotterdam; Mesos, Utrecht; Antoni van Leeuwenhoek, Amsterdam; Sint Anna, Geldrop; Sint Antonius, Nieuwegein; Sint Elisabeth, Tilburg; Sint Lucas, Winschoten; Slingeland, Doetinchem; Tergooi, Blaricum; Twee Steden, Tilburg; Hospital Zevenaer, Zevenaer.

Funding by: Sanofi Aventis, Netherlands Organization for Health Research and Development (ZonMW) and Comprehensive Cancer Centre South (IKZ)