Results of 20 versus 45 minutes post-infusion scalp cooling time in the prevention of docetaxel-induced alopecia

Authors: M.M.C. Komen[1], W.P.M. Breed[2], C.H. Smorenburg[3], T. van der Ploeg[1], S.H. Goey[4], J.J.M. van der Hoeven[5], J.W.R. Nortier[6], C.J.G. van den Hurk[7]

[1] Medical Centre Alkmaar, The Netherlands | [2] Foundation give hair a chance: Knowledge Institute Scalp Cooling, The Netherlands [3] Antoni van Leeuwenhoek, The Netherlands | [4] Twee Steden Ziekenhuis, The Netherlands | [5] Radboud University Medical Centre, The Netherlands | [6] Leiden University Medical Centre, The Netherlands | [7] Comprehensive Cancer Organisation, The Netherlands

Introduction

For patients, chemotherapy-induced alopecia (CIA) is one of the most distressing side-effects of treatment. Scalp cooling can prevent or minimise CIA; the results may depend on the duration of cooling. Recommendations for scalp cooling times are often based upon past experience or used arbitrarily. The duration of post-infusion cooling implies a prolonged stay at the chemotherapy ward, being a potential disadvantage of scalp cooling both for patients as well for the logistics of the clinic.

Aim of this study

This study investigated whether hair-preserving results could be maintained with a shorter post-infusion cooling time.

Methods

- Patients treated with docetaxel-containing schedules at 3-weekly intervals (excluding TAC)
- Randomly assigned to a post-infusion cooling time of 45 minutes or 20 minutes
- Scalp cooling using the Paxman® PSC-1 system
- Using a non pre-cooled Paxman cap
- Informed consent
- Satisfactory hair retention= no head covering needed

Results

We conducted a multi-centre randomized study. A total of 97 patients were evaluable for hair preservation. 76% Of the patients did not need a head covering. Results were better in lower docetaxel dosages (75 versus 100 mg/m2). Scalp-cooling results were similar for 45 minute and 20 minute post-infusion cooling times. Thirty-three out of 45 patients (73%) treated with 20 minutes of post-infusion cooling did not need a form of head covering, compared with 41 out of 52 patients (79%) treated with 45 minutes of post-infusion cooling (p=0.5) (Table 1).

Conclusions

- There is no significant difference in head covering between 20 minutes post-infusion cooling compared with 45 minutes post-infusion cooling.
- 20 Minutes post-infusion cooling can be advised as a standard post-infusion cooling time for patients treated with 3-weekly docetaxel containing therapy.

Table 1:
Efficacy of scalp cooling depending on type and dosage of chemotherapy and gender

	No head covering		Head covering		P value
Post-infusion cooling time					0.5
20 minutes	33	(73%)	12	(27%)	
45 minutes	41	(79%)	11	(21%)	
Chemotherapy					*
Docetaxel monotherapy	67	(78%)	19	(22%)	
Docetaxel combination therapy	7	(70%)	3	(30%)	
Docetaxel/ gemcitabin	1		0		
Docetaxel/ carboplatin	5		2		
Docetaxel/ capecitabin	1		0		
Docetaxel/ cyclophosphamide	0		1		
Dosage					<0.0001
75 mg/m2	60	(92%)	5	(8%)	
100 mg/m2	11	(44%)	14	(56%)	
Gender					<0.0001
Male	59	(95%)	3	(5%)	
Female	15	(43%)	20	(57%)	

*Chi-square results are invalid because of cell counts less than 5

Noordwest Ziekenhuisgroep

www.nwz.nl