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Scalp cooling use in breast cancer patients receiving neoadjuvant/adjuvant systemic chemotherapy in England

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Scalp cooling use in breast cancer patients receiving neoadjuvant/adjuvant systemic chemotherapy in England

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Abstract

Background

Chemotherapy-induced alopecia is a distressing side-effect. Currently the use of scalp cooling has been encouraged but we do not really know the rate of compliance or success in routine practice.

Methods

We have carried out an audit in our centre to assess both, compliance and success in our patients diagnosed with breast cancer who will start chemotherapy with neoadjuvant or adjuvant intent. The degree of hair loss was assessed before cycle 2 and the last cycle, using Deanâ€™s scale.

Results

72 patients were assessed. 27.7% decided to use the scalp cooling, many declined, most of them (61.5%) argued that they were not worried about hair loss. Dean's alopecia score was excellent in 25%, good in 10%, and moderate/poor in 65%.

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Conclusions

Although scalp cooling may prevent significant alopecia, our patients continue to be reluctant arguing that hair loss does not bother them much. Perhaps the fear of scalp metastases or the reduced benefit from chemotherapy, recognised by patients in forums but not with doctors, need a frank conversation and further education.

BACKGROUND

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Chemotherapy-induced alopecia is a distressing side-effect that will impact negatively on patientâ€™s personal image (1,2). Since 1970 several preventive measures have been tried but currently all these measures mainly focus on scalp cooling. This has shown some effectiveness in preventing hair loss (1,2).

The extent of alopecia will depend mainly on which agents are used, for how long and the timing (2). Weekly regimens are less likely to cause as significant alopecia as three weekly ones (2).

Scalp cooling caps will cause scalp hypothermia during chemotherapy infusions aiming at reducing the blood flow to the scalp (1). However, this procedure has been thought to increase the risks of cancer recurring in the scalp and some patients complain about feeling uncomfortably cold and having headaches with it as well (3). A recent systematic review of the literature on scalp metastasis following adjuvant chemotherapy for early-stage breast cancer found it unlikely that the incidence might increase after scalp cooling. In fact, it did not demonstrate a statistical difference in the incidence of scalp metastasis between patients using scalp cooling vs. no scalp cooling (3).

Currently the use of scalp cooling has been encouraged but we do not really know the rate of compliance or success in routine practice.

In this context, we decided to carry out an audit of the use and effectiveness of scalp cooling in our patients diagnosed with breast cancer who will receive adjuvant or neoadjuvant chemotherapy.

METHODS

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We assessed retrospectively patients receiving adjuvant or neoadjuvant chemotherapy for early breast cancer. The study was carried out in the first 6 months of this year.

The degree of hair loss was assessed before cycle 2 and the last cycle. Â

The Deanâ€™s scale to assess the grade of hair loss is shown in Table 1.

RESULTS

72 patients were assessed. 27.7% (20/72) decided to use the scalp cooling. The regimens of chemotherapy they received are included on Table 2.

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Many patients declined the use of scalp cooling and the reasons for this appear on Table 3. Most patients (61.5%) argued that they were not worried about hair loss.

The age of patients receiving chemotherapy and their decision regarding the scalp cooling is reported on Table 4, including the results of its use.

One patient kept the hair even though she declined the use of the cold cap. She was receiving weekly Paclitaxel and before last cycle she had a grade 1 alopecia in Deanâ€™s scale. Â Â

According to our data, the highest proportion of patients accepting the cold cap is within the youngest population followed by the group of patients in their 60s.Â

The effectiveness in our group of patients according to Deanâ€™s scale was assessed prior to second cycle and final cycle. This last one is reported on Table 5.

Prior to cycle 2 most patient kept their hair even without the use of scalp cooling although most of them had noticed grade 1 alopecia.

Dean's alopecia score was excellent for 25% of patients (grade 0, 1), good for 10% of patients, and moderate or poor (grade 3, 4) for 65% of patients.

The adverse events and frequency are reported on Table 6.Â

The majority of patients reported hair thinning after every chemotherapy cycle. One patient discontinued scalp cooling due to headaches/migraine induced by scalp cooling.

Table 1: Deanâ€™s scale of alopecia

Grade of alopecia	Hair loss percentage
Grade 0	No hair loss
Grade 1	< 25%
Grade 2	25-50%
Grade 3	50-75%
Grade 4	>75%

Table 2: Regimens of chemotherapy

Â Regimen	Â N	Use of cold cap	
		Yes	No
FEC/T	15	7	8
TCHP	52	9	43
THP	1	1	0
Weekly Paclitaxel	3	2	1
TC	1	1	0
Total	**72**	**20**	**52**

Â T â€“ Docetaxel, C â€“ Cyclophosphamide, E â€“ Epirubicin

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Table 3: Reasons for declining scalp cooling

Reasons for declining	N
Not worried about hair loss	32
Fear of bad experience	8
Previous headaches	8
Fear of scalp metastases	4

Table 4: Age and scalp cooling use

Age	Used scalp cooling		Declined scalp cooling		Â % use vs decline
	Hair lost*	Hair kept	Hair lost*	Hair kept	
â‰¥ 70	2	2	7	1	33%
â‰¥ 60	5	2	10	0	41%
â‰¥ 50	**1**	1	**18**	0	10%
â‰¥ 40	**1**	**2**	**11**	0	21%
â‰¥ 20	**4**	**0**	**5**	0	44%
TOTAL	**20**		**52**		**Â**

*(Deanâ€™s grade â‰¥ 3)

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Table 5: Effectiveness of scalp cooling before last cycle

Grade of alopecia	Hair loss percentage	N	Score	%
Grade 0	No hair loss	1	Â Excellent	Â 35%
Grade 1	< 25%	4		
Grade 2	25-50%	2	Good	
Grade 3	50-75%	3	Â Poor	Â 65%
Grade 4	>75%	10		

Table 6: Toxicities and frequency with scalp cooling

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Toxicities	N	Abandoned due to toxicities
Headaches	4	1
Discomfort	3	0

CONCLUSION

As a routine we offer scalp cooling to all our patients who will start adjuvant or neoadjuvant chemotherapy for early breast cancer. The risk of scalp metastases is explained but informing that systematic reviews do not seem to support that.

In our population of patients, only one patient abandoned the scalp cooling due to migraines not responding to Paracetamol but following the general recommendations (such as using Paracetamol routinely before the scalp cooling is fitted) no other patients stopped using it due to toxicities.

In our group of patients, we only achieved good/excellent score in around 35% but in several patients considered to have a poor score, this was due to badly fitted cap. We plan to increase the effectiveness by ensuring tight fit especially on crown for all patients.

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