Scalp Cooling Policy for Adult Cancer Patients receiving Alopecia Inducing Chemotherapy

“Quality and safety for every patient every time”

Document Control

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Scalp Cooling Policy for Adult Cancer Patients receiving Alopecia Inducing Chemotherapy

Introduction

Hair loss can be a very distressing side effect for patients undergoing chemotherapy and sometimes lead to patients refusing treatment. It can be a major psychological issue for some patients.

Scalp cooling is a method of minimising chemotherapy-induced alopecia and has been shown to effectively reduce the incidence of hair loss. It acts by reducing the hair follicles temperature of the scalp, causing the blood vessels supplying the hair follicles to constrict which decreases the amount of drug that can pass to the hair follicles. This reduces the cellular uptake of the drug and the degree of hair loss.

The drugs cause atrophy and loss of the hair root bulb resulting in total alopecia or partial atrophy of the hair shaft, making it more susceptible to the trauma of normal hair care.

Scalp cooling can be used to prevent total hair loss in certain drug protocols. Minimal evidence exists to prove the efficacy of scalp cooling methods and which method is most effective. There is also little, and conflicting, evidence about the risk of scalp metastasis and so the use of scalp cooling is controversial. Some doctors are concerned that cancer cells, which may have spread to the scalp, may be more likely to survive the chemotherapy if scalp cooling is used. However secondary cancers in the scalp are very uncommon. Trials have shown that the risk of developing these as a result of scalp cooling is very small, except in some more aggressive haematological cancers.

For this reason the cap should only be used following discussions around appropriateness of use with the patients and patient’s consultant, including additional length of time of clinic appointment. Patients must be fully informed, including risks, prior to agreeing and consenting to use the scalp cooling system.

Despite scalp cooling some patients still lose their hair or hair may just thin slightly. Scalp cooling only protects hair on the scalp. Other areas of body hair may still be lost.

Indications

Scalp cooling may be offered to patients who have solid tumours who are receiving single agents or in combinations with other cytotoxic drugs which do not cause alopecia. It is most commonly used for patients with breast cancer.

Scalp cooling is most likely to be effective with;

Cyclophosphamide
Daunorubicin
Docetaxel (Taxotere)
Doxorubicin (Adriamycin)
Epirubicin
Paclitaxel (Taxol)
**Exclusions / Contra Indications**

Scalp cooling is not suitable:

- When there is too high a risk that cancer cells could survive in the blood vessels of the scalp and cause the cancer to come back after treatment, for example, with some haematological malignancies such as certain myeloma, leukaemia and lymphoma.
- For some patients requiring very high doses of chemotherapy, as scalp cooling is less likely to work with very high doses of the drug.
- For some chemotherapy treatments where the drug stays in the body for a long time for example patients receiving continuous treatment via a pump or drugs with a long half life. This makes it impractical to have scalp cooling.
- In patients whose liver function is compromised. This may lead to the drugs circulating in the body for longer than usual, and it may not be possible to keep the scalp cold for long enough.
- In patients who suffer from severe migraines.
- Patients receiving other drugs which cause hair loss, where there is limited or no evidence of the effectiveness of scalp cooling, for example Etoposide.
- Patients who have received their first cycle of chemotherapy which may induce hair loss but where scalp cooling was declined or not offered. Hair loss at this time is inevitable and scalp cooling would be futile.
- Patients receiving oral Cyclophosphamid as there is uncertainty about the length of time it takes for the drug to metabolise via the oral route.

Scalp cooling can be a long and uncomfortable procedure. Due to time limitations it is not appropriate with regimens that have lengthy administration times (greater than 3 hours). The length of time required to successfully prevent hair loss would cause discomfort to the patient and also increase the length of time the patient would need to stay on the chemotherapy unit.

If patients insist on using the scalp cooling in longer regimens then they should be made aware that the chances of success are not known. This must be recorded in the patients’ records.

Patient should be informed that they will feel ‘chilly’ when using the caps and advised to wear warmer clothing when attending for treatment. They should be offered hot drinks. They may experience headaches especially in hot weather.

Patients should be informed of the wig fitting service available where appropriate, supported by relevant written literature regarding hair loss and hair/scalp care.

**Procedure.**

A minimum of verbal consent must be obtained from the patient and their decision recorded in the medical/nursing notes.

Patients’ suitability to continue using the caps should be re-discussed at each visit as continuity is likely to achieve greater success. However some patients may still wish to continue using the caps even if they are experiencing patchy hair loss. They should be informed of the risk of ice burns and that the thickness of the padding used to protect from ice burns may reduce the effectiveness of scalp cooling.

There are two systems for scalp cooling in use:
Section 2 Paxman Scalp Cooler

General care of the Paxman Scalp Cooler

- The Paxman scalp cooling system consists of a small compact refrigeration unit containing a coolant which is circulated at -5°C through coolant lines to specially designed cooling caps.

- It is simple to operate with no complicated dials or controls, easy to read digital displays, allowing instant visual monitoring. The compact nature and manoeuvrability of the system ensures an efficient use of space however frequent moving of the machine can cause functioning problems. In confined areas, the cooling unit can be easily placed near to chairs or beds. In large chemotherapy suites, several machines can be working at the same time.

Directions of use of Paxman Scalp Cooler

1. Discuss scalp cooling with the patient. (Ensure both verbal and written information is given and that the patient has signed a consent form)
2. Check coolant levels (At back of Paxman cooling machine).
3. Check all connectors to machine are intact
4. Check hats are clean and in working order
5. Check temperature is at the operating temperature of -5°C
6. Assess size of patients head and use the correct hat (Red-Small, Blue- Medium, Green-Large)
7. Ask the patient to remove their earring and hair pieces
8. Dampen hair with conditioner or water
9. Apply cotton wool to tops of ears and forehead
10. Prior to chemotherapy administration place cap gently onto head, following the manufactures recommended pre cooling times and ensuring a tight fit
11. Reassure the patient that it will initially feel cold
12. Offer blankets and analgesia for any headaches
13. Tighten the under chin strap and ensure a tight comfortable fit. The scalp cooling hat should stay on for the recommended amount of time (Paxman guidelines located with scalp cooler. Indicating times for each individual drug)
14. Once the allocated time is complete. Gently remove the cap. Loosen the strap and lightly lift the cap.
15. Assist the patient if required
16. After use wash and dry the cap in preparation for the next patient.
17. Document in the patient’s notes. Type of hair, condition of hair and any comments related to their scalp cooling experience.
18. Whilst the scalp cooling machine is connected it is possible to disconnect for a short period of time in order to go out to the Lavatory.
Section 3 Chemocaps System

In this system individual ChemoCaps (made of glycerol-gel spread in a single block inside a pocket) are kept in refrigerated until needed then a cap taken out and applied for a specified period of time (see directions below and manufacturers instructions) then replaced with fresh chilled cap(s) as directed.

General care of the Chemocaps

- The caps must be stored in a freezer capable of reaching a temperature below -25 degrees C. This is because subcutaneous cell metabolism is reduced at a temperature below 22 degrees C.
- The caps must not be stored at a temperature colder than -30 degrees C.
- Each cap must be stored in the freezer at the correct temperature for at least 12 hours prior to use.
- Caps must be stored upright with a plastic support inserted e.g. ∩, so that correct shape is maintained. Caps must not be squashed as this alters the shape.
- Used caps should be left out of the freezer at the end of each clinic session, and only placed back in the freezer once cleaned. The caps should be cleaned using a damp cloth or sponge with soap and water. THEY MUST NEVER BE IMMERSED OR SOAKED IN WATER.

Directions of use of Chemocaps

1. The cap should be fitted snugly over the patients head with a neoprone overcap applied on top of the chemocap to maximise adherence to the scalp.

2. A small piece of gauze may be applied underneath the cap to protect the exposed skin on the forehead and ears.

3. The first cap must be applied at least 15 minutes before the chemotherapy commences. Leave the first cap in place for a total of 30 minutes.

4. Subsequent caps may be left in place for 45 minutes because the scalp will already be cold. The final cap should be in place for 60 minutes. For example if the drug protocol requires 2 Chemocaps then the second cap may be left in place for 60 minutes. If 3 Chemocaps are to be used the third cap should be left in place for 60 minutes.

5. If drugs are given in combination always apply the higher number of chemocaps required from the combination drugs. For example if Epirubicin is given at 60mg/m² with Cyclophosphamide at 800mg/m² apply 3 caps as would be necessary for the Cyclophosphamide.
1. Adams, L. et al. (1992) The prevention of hair loss from chemotherapy by the use of cold air scalp cooling. The European Journal of Cancer Care 15 pg 16-18


