

# EFFICACY OF THE COLD CAP IN THE PREVENTION OF ALOPECIA IN PATIENTS RECEIVING DOCETAXEL (TAXOTERE) CHEMOTHERAPY AFTER FAILURE OF PREVIOUS TREATMENTS IN SOLID TUMORS.

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## Abstract

Docetaxel is a new antineoplastic agent which gives interesting response rates and is currently under investigation in a variety of clinical settings. Still, drug-induced alopecia occurs in over 80% of patients (around 70% for grade 2-3) and represents a major psychological drawback for the patients. **PATIENTS** : In our unit, 98 patients were treated with Docetaxel after failure of previous chemotherapy regimen and were proposed a cold-cap technique aimed at the prevention of drug-induced alopecia. The patients (93 females and 5 males) were divided into: metastatic breast cancer (n=88), advanced ovarian cancer (n=3) and advanced pancreatic cancer (n=7). Previous chemotherapy regimen were either anthracyclin-based or containing Mitoxantrone or Paclitaxel. **METHODS** : To apply the cap as tightly as possible, we put a wet single-use mobcap on the patient's hair. The temperature of the cap had to be around -25°C. Adherence to the scalp was improved by bandages. Cotton protected the nap, brows and ears. Chemotherapy was started 15 minutes after putting the cap on; the cap was changed 30 minutes after the beginning of the infusion, and the second cap was worn for 1 hour. Alopecia was assessed according to World Health Organisation (WHO) criteria. Success was defined as WHO grade  $\leq 2$  alopecia and no need to wear a wig (according to patient's decision). Failure was defined as the fact that the patient wore a wig whatever the grade of alopecia. **RESULTS** : All patients but one were evaluable for the results. One patient was not evaluable for the study as she refused to continue chemotherapy and was lost to follow-up. 83 patients (85,60%) were successful responders to the cap as they had WHO grade 0 or grade 1 alopecia : 35 patients presented no alopecia (i.e. grade 0), they were treated with a median number of 5 Docetaxel cycles (range 3-9); 37 patients had WHO grade 1 alopecia and received a median number of 6 Docetaxel cycles (range 3-11). 11 patients (10 females, 1 male) presented WHO grade 2 alopecia and no necessity to wear a wig. 14 patients (14,4%) were evaluated as a failure to the cold cap : 7 of them refused to continue with the cap, one at cycle 1, two at cycle2, and four at cycle 3. They presented alopecia as follows : one grade 0, one grade 1, four grade 2 and one grade 3. The other 7 patients had to wear a wig, 3 of them presented grade 2 alopecia and 4 patients had a grade 3 alopecia. **CONCLUSION** : The cold cap is an effective technique for the prevention of Docetaxel-induced alopecia. The high rate of success which can be obtained makes it a major improvement in the quality of life for cancer patients.

## Introduction

Alopecia is frequent in patients receiving Taxotere (TXT) (80% of patients with 70% of grade 2-3) and represents a major psychological drawback for the patients. The Oncology Research Nursing Staff of the Centre Oscar Lambret (LILLE-FRANCE) has been using the cold cap for many years in the prevention of alopecia induced by chemotherapy. They adapted and evaluated a new technique for patients receiving TXT.

## Patients

98 patients were treated with TXT (100 mg/m) after failure of one or more previous chemotherapy regimen and were proposed a cold cap technique aimed at the prevention of drug induced alopecia. Patients (93 females and 5 males) were divided into metastatic breast cancer (n=88), advanced ovarian cancer (n=3) and advanced pancreatic cancer (n=7). Previous chemotherapy regimen were either anthracyclin-based or containing mitoxanthrone or paclitaxel.

## Methods

A wet single-use mob cap is put on the patients hair (photo 1).



Photo 1.

Cotton protects the ears, the nape and the forehead (photo 4). The cold cap is tightened with bandages (photo 5). Chemotherapy is started 15 minutes after putting the first Chemotherapy is started 15 minutes after putting the first cold cap on. Two nurses change it quickly 30 minutes after the beginning of the infusion. The second cold cap is worn for 1 hour.

Then nurses put the cold cap on (photo 2-3) : Peters, Akromed) which is at minus 25°C (the cold cap must have been in the freezer for at least twelve hours to be at minus 25°C).

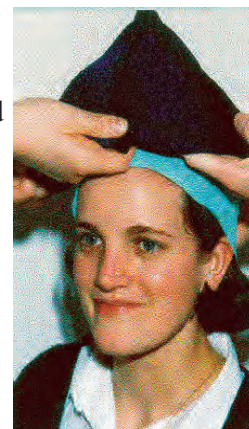


Photo 2.



Photo 3.



Photo 4.



Photo 5.

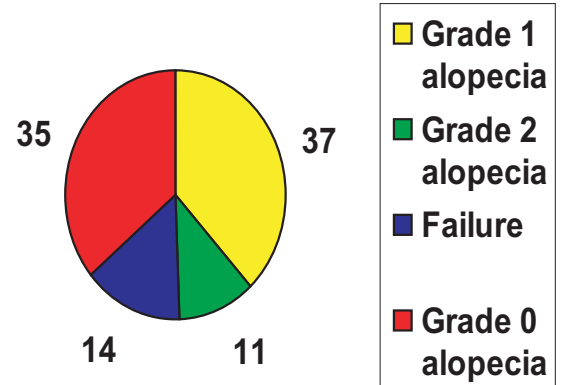
Alopecia was assessed according to World Health Organisation (WHO) criteria: Success was defined as WHO grade  $\leq 2$  alopecia and no need to wear a wig (according to patient's decision). Failure was defined as the fact that the patient wore a wig whatever the grade of alopecia.

WHO Criteria:

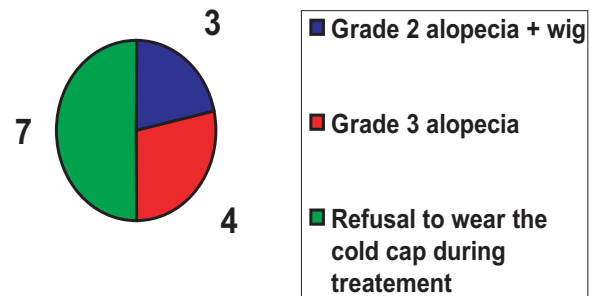
- Grade 0 : no alopecia
- Grade 1 : slide and regular hair loss
- Grade 2 : moderate hair loss
- Grade 3 : complete but reversible hair loss
- Grade 4 : complete and irreversible hair loss

**Results**

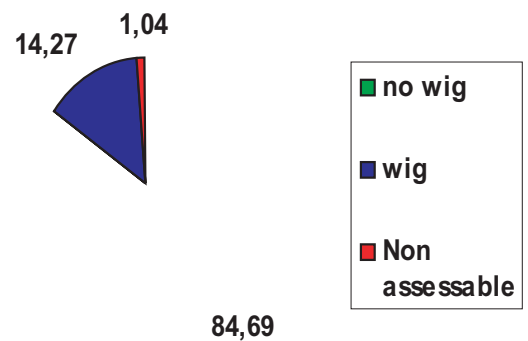
All patients but one were evaluable for the results.



Overall results according to WHO criteria  
(in number of patients)



Failure analysis (in number of patients)



Efficacy of the cold cap (in % of patients)

**Conclusion**

The cold cap is an effective technique for the prevention of TXT induced alopecia. It is safe, well accepted by patients and no major side effects. The cold cap can be recommended for routine use in docetaxel chemotherapy to improve the quality of life of patients.

*Akromed Cold caps are manufactured by Southwest Technologies Inc. Kansas City, USA.*