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Scalp hypothermia to prevent chemotherapy-induced alopecia is effective and safe: a pilot study of a new digitized scalp-cooling system used in 74 patients.

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Abstract

GOALS: The aim of this study was to examine the efficacy and safety of a new digitized, controlled, scalp-cooling system to prevent chemotherapy-induced alopecia.

METHOD: Seventy-four female cancer patients who received 13 varying chemotherapy regimens were included in a nonrandomized pilot study. The Digni 2-3 with Dignicap system consists of a refrigerator unit and a control unit integrated into a mobile cabinet and connected to a tight-fitting cooling cap. This system maintains a constant scalp temperature of +5 degrees C for many hours. In this study, 60 patients were treated for ovarian cancer with either taxane or epirubicin combination chemotherapy. Eight patients with Hodgkin's lymphoma, three with breast cancer, two with endometrial cancer, and one with sarcoma were also included. Photo documentation and patient assessment of hair loss and discomfort were performed.

RESULTS: In anthracycline-treated patients, total prevention of hair loss was observed, whereas hair loss in paclitaxel/docetaxel-treated patients was minimal to none. The combination of anthracycline and taxane resulted in more hair loss, but only three of six patients used a wig. Scalp cooling was generally very well tolerated; only two of 74 patients discontinued use of the cold cap due to discomfort. No scalp metastases occurred over a median follow-up period of 15 months.

CONCLUSIONS: The digitized, controlled, scalp-cooling system represents an effective and safe device that should be clinically evaluated in a randomized trial and in studies using other chemotherapy regimens to determine optimal temperatures and durations of cooling for maximal efficacy.

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