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## RESIDENT'S FORUM

### RF-Scalp Cooling<sup>☆</sup>

### FR-Enfriamiento del cuero cabelludo

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#### PALABRAS CLAVE

Alopecia;  
Quimioterapia;  
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#### KEYWORDS

Alopecia;  
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Scalp cooling is a technique for reducing chemotherapy-induced hair loss.<sup>1</sup> It has been theorized that scalp cooling has two mechanisms of action: reducing uptake of chemotherapeutic agents in the hair follicles through local vasoconstriction and decreasing the metabolic activity of the follicles. The main concern regarding the use of scalp cooling devices is the possibility that this technique could increase the risk of cutaneous metastases. Most studies assessing the efficacy and safety of this technique have been carried out in patients with breast cancer, in

whom no increased risk of cutaneous metastases has been demonstrated.<sup>1,2</sup> The evidence supporting the use of scalp cooling in patients with other solid tumors, such as prostate and ovarian cancer, is less robust. Scalp cooling is not recommended for diseases with a high tumor burden, such as hematologic malignancies.

A nonnegligible number of women refuse chemotherapy because of the risk of hair loss.<sup>3</sup> Therefore, it makes sense to use interventions that reduce the comorbidity associated with these systemic treatments.

Two recent clinical studies in women with breast cancer have confirmed the utility of scalp cooling with automatic devices.<sup>4,5</sup>

In both studies, scalp cooling was associated with a significant decrease in hair loss in approximately 50% of the women studied. Five percent of patients who used a scalp cooling device did not experience any hair loss. It should be noted that in the observational study hair loss was self-reported and the patients were not taking anthracyclines.<sup>4</sup> In the clinical trial, alopecia assessments were carried out by a blinded researcher and patients received anthracycline-based chemotherapy.<sup>5</sup>

In the cohort study, patients who used a scalp cooling system had better scores regarding perception of hair loss, dissatisfaction associated with hair loss, and feelings of attractiveness 1 month after chemotherapy.<sup>4</sup> In the clinical trial, no significant differences were found in patients' quality of life, although the questionnaire used in the study has not been validated for the assessment of the impact of alopecia on quality of life.<sup>5</sup>

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Regarding the safety of scalp cooling interventions, reports of local side effects—mainly local discomfort and headache—are rare. No scalp metastases were found in patients who underwent the procedure in either of the aforementioned studies. In the nonexperimental study, 2.8% of patients discontinued the procedure due to low tolerance of cold.<sup>4</sup> However, 10% of patients discontinued chemotherapy because of hair loss.

Finally, regarding the cost of providing this procedure through the national health system, it is worth noting that 2 other interventions that aim to improve quality of life—breast reconstruction after mastectomy and areolar micropigmentation—are also paid for by Spain's public system. The scalp cooling devices used in the cited studies have a cost per patient of between \$1500 and \$3000.<sup>4,5</sup>

In conclusion, scalp cooling is a technique that should be considered for the prevention of chemotherapy-induced hair loss in patients with breast cancer.

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