**Prevention of chemotherapy-induced alopecia in patients with breast or female genital tract cancer using sensor-controlled scalp-cooling**

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**Background:** Chemotherapy (Ctx)-induced alopecia (CIA), produces a deep psychological impact in many women involved. Although sensor-controlled scalp cooling (SCSC) is effective in preventing CIA, it is infrequently used in many countries due to physician concerns regarding both safety and feasibility. This retrospective analysis was initiated to obtain detailed information about the effectiveness and safety of SCSC using the Paxman system (Paxman, Huddersfield, UK) in female patients exposed to CIA-inducing Ctx for breast cancer (BC) or genital tract malignancies in the clinical routine.

**Methods:** 87 pts who underwent SCSC alongside Ctx from 2014-2016 were identified from our database: BC, 68; epithelial ovarian carcinoma, 14; others, 5; premenopausal, 42; postmenopausal, 45. 63 pts were treated in a curative intent, 24 were treated in a palliative setting. 57 pts were Ctx-naïve, 30 pts had a history of prior Ctx. The following Ctx regimens were used: anthracycline-based (A), 4; taxane-based (T), 21; AT-based, 48; others, 14. Pts were subjected to SCSC during each Ctx cycle. CIA was quantified according to the Dean score (DS) determined 3 wks after the last Ctx cycle. Data were analyzed regarding feasibility indicated by the SCSC completion rate, quality of hair preservation (success: DS 0-2, failure: DS 3-4), reasons of SCSC discontinuation, and safety.

**Results:** 57 pts (64.5%) completed SCSC, with 47 (53.0%) experiencing complete hair preservation (DS 0), and 10 (11.5%) showing partial success (DS 1-2). 30 pts (35.5%) discontinued SCSC, with CIA being the main reason in 21 pts (24.1%). Headache was reported in 4 (5.0%), and local discomfort (“feeling cold”) in 3 pts (3.4%). In 2 pts (2.3%), the reason of discontinuation remained unclear. Side effects were all not severe and resolved completely after cessation of SCSC.

**Conclusions:** In the clinical routine, SCSC using the Paxman system is feasible, safe and effective in order to prevent CIA in pts with BC or genital tract carcinomas. The treatment success rate in our study is in good agreement with previous reports on SCSC although more pts in the palliative setting or with a history of prior Ctx have been included.

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