

**Abstract N°: 1669****Chemotherapy-induced alopecia (CIA) – risk factors, trichoscopy and therapeutic possibilities**Alicja Tabian¹, Lidia Madrzak²¹Cardinal Stefan Wyszyński University in Warsaw, Faculty of Medicine. Collegium Medicum, Warsaw, Poland²Medical University of Warsaw, Warsaw, Poland**Introduction & Objectives:**

Chemotherapy-induced alopecia (CIA) is one of the most severe side effects of cancer treatment, leading to up to 8% of chemotherapy refusals due to fear of hair loss. CIA occurs in approximately 65% of patients with classical cytostatics and less than 15% with targeted therapies. The highest risk of permanent alopecia, up to 20%, is associated with taxanes such as docetaxel and paclitaxel. CIA not only affects the appearance of patients, but also their psychological wellbeing and quality of life, making this topic particularly relevant to dermatology. This paper aims to review the pathogenesis, risk factors, methods of prevention and the impact of CIA on quality of life, with particular emphasis on the role of scalp cooling.

Materials & Methods:

A literature review was conducted using PubMed, Scopus and Web of Science databases, covering studies from 2017-2025. Data on the frequency of CIA according to chemotherapy regimens, including taxanes, and objective hair parameters measured by non-invasive methods were analysed. The effectiveness of preventive methods, such as scalp cooling and minoxidil, and psychosocial impact using quality-of-life questionnaires were also investigated.

Results:

The incidence of CIA was higher with docetaxel than with paclitaxel, reaching 23.3% and 10.1%, respectively. In 42.3% of breast cancer patients, CIA persisted after three years. Risk factors included taxane-based regimens, menopause and hormonal therapy such as aromatase inhibitors. Trichoscopy revealed characteristic features such as „black dots”, broken hair, „flame” hair and Pohl-Pinkus constrictions. Scalp cooling proved to be an effective prevention method, reducing CIA in 50-80% of patients. In the study, 83.3% of patients using cooling reported no alopecia. The psychosocial impact of CIA was significant, with 75% of patients reporting hair thinning after 3 years and 53.9% reporting reduced volume.

Conclusion:

CIA represents a significant therapeutic challenge, especially in the context of permanent alopecia after taxanes. Scalp cooling is the most effective method of prevention, but needs to be more widely available. Involving dermatologists in the care of oncology patients and early education about the risks of CIA are necessary. The development of new therapies, such as CDK4/6 inhibitors, which can protect hair follicle stem cells, and prostaglandin agonists, such as latanoprost, which show potential in stimulating hair growth, may provide important benefits in the prevention and treatment of CIA. Further research should elucidate the pathomechanisms of hair follicle stem cell damage in order to develop strategies to restore their function. Implementation of these strategies may significantly improve the quality of life of patients undergoing chemotherapy.

