Dermatology Practical & Conceptual

Persistent Chemotherapy-Induced Alopecia Treated With Low Dose Oral Minoxidil: A Multicenter Retrospective Case Series of 15 Patients

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Introduction

Persistent chemotherapy-induced alopecia (PCIA) is defined as the absence of hair regrowth after more than 6 months of treatment discontinuation [1]. Topical minoxidil has been considered as the drug of choice in prevention or treatment of CIA. In a case of PCIA the efficacy of topical minoxidil may be limited [2,3]. Moreover, it may cause scalp irritation with itching, dryness and scaling. The use of low-dose oral minoxidil (LDOM) for the treatment of various forms of hair loss has demonstrated great efficacy [4]. To date, data considering efficacy of LDOM in PCIA are limited [2,5].

Case Presentation

A retrospective analysis of case series of 15 patients treated with LDOM for PCIA (Table 1) was performed. All patients with biopsy-proven PCIA with no efficacy from topical minoxidil used for at least one year were included. Patients with diagnosis of other form of hair loss or using other, than oral minoxidil, drug for alopecia were excluded.

All patients presented with thinned and sparse hair, with more or less pronounced areas of bare scalp. Trichoscopy showed a reduction of follicular units with an increase in vellus hair formation in the absence of inflammation and scarring. LDOM was used at a daily dose of 1.5 mg in less

Table 1. Characteristics of patients with persistent chemotherapy-induced alopecia treated with low dose oral minoxidil.

Patients numbers	15
females	13
males	2
Age (years), mean (range)	49 (35-71)
Disease	
breast adenocarcinoma	12
lung adenocarcinoma	1
myelodysplasia	1
Hodgkin lymphoma	1
Taxane-based therapy	
docetaxel	3
paclitaxel	7
Non-taxane based therapy	
carboplatin	3
cisplatin	1
cyclophosphamide	10
dacarbazine	1
doxorubicin	2
epirubicin	3
etoposide	3
5-fluorouracil	1
vincristine	1
vinorelbine	1
Targeted therapy	
pertuzumab	3
trastuzumab	4
Alopecia grade	
grade 1	7
grade 2	8
Trichoscopy	
circle hairs / yellow dots	3
hair thinning / empty follicules	15

severe cases (seven cases with grade 1 alopecia according to CTCAEv5.0) and 2.5 mg in more severe ones (eight cases with grade 2 alopecia). Efficacy of LDOM was assessed based on clinical and trichoscopic pictures. After six to 12 months, clinical improvement was observed in seven (100%) patients with grade 1 and in six (75%) patients with grade 2 alopecia. Trichoscopy revealed an increased hair thickness and growth of new hair (Figure 1). Two out of eight patients affected by grade 2 alopecia were not able to abandon the wig, but partial hair regrowth and increased thickness made them feel more confident. Dose reduction from 2.5 mg to 1.5 mg was necessary, at the three months follow up, in three females due to non-acceptable facial hypertrichosis. No other, including cardiological, side effects were reported. No cardiological tests were needed during and after the therapy. All patients refused a post-treatment scalp biopsy.

The results of the present study is consistent with the study conducted by Kang et al. (5) who observed efficacy of combination of LDOM and topical minoxidil in patients with PCIA. In our study, LDOM used in monotherapy was effective.

The limitation of the study is a small group of the patients included into analysis and the lack of post-treatment histology which would allow to define improvement on pathology grounds. Further studies are needed to better clarify the mechanism of action of LDOM in patients affected by PCIA and to draw conclusions concerning optimal drug dosages.

Conclusions

To conclude, we believe that LDOM is a promising therapeutic option for patients with PCIA who do not benefit from the topical solution or report disadvantages related to friction on a delicate scalp with thin hair.

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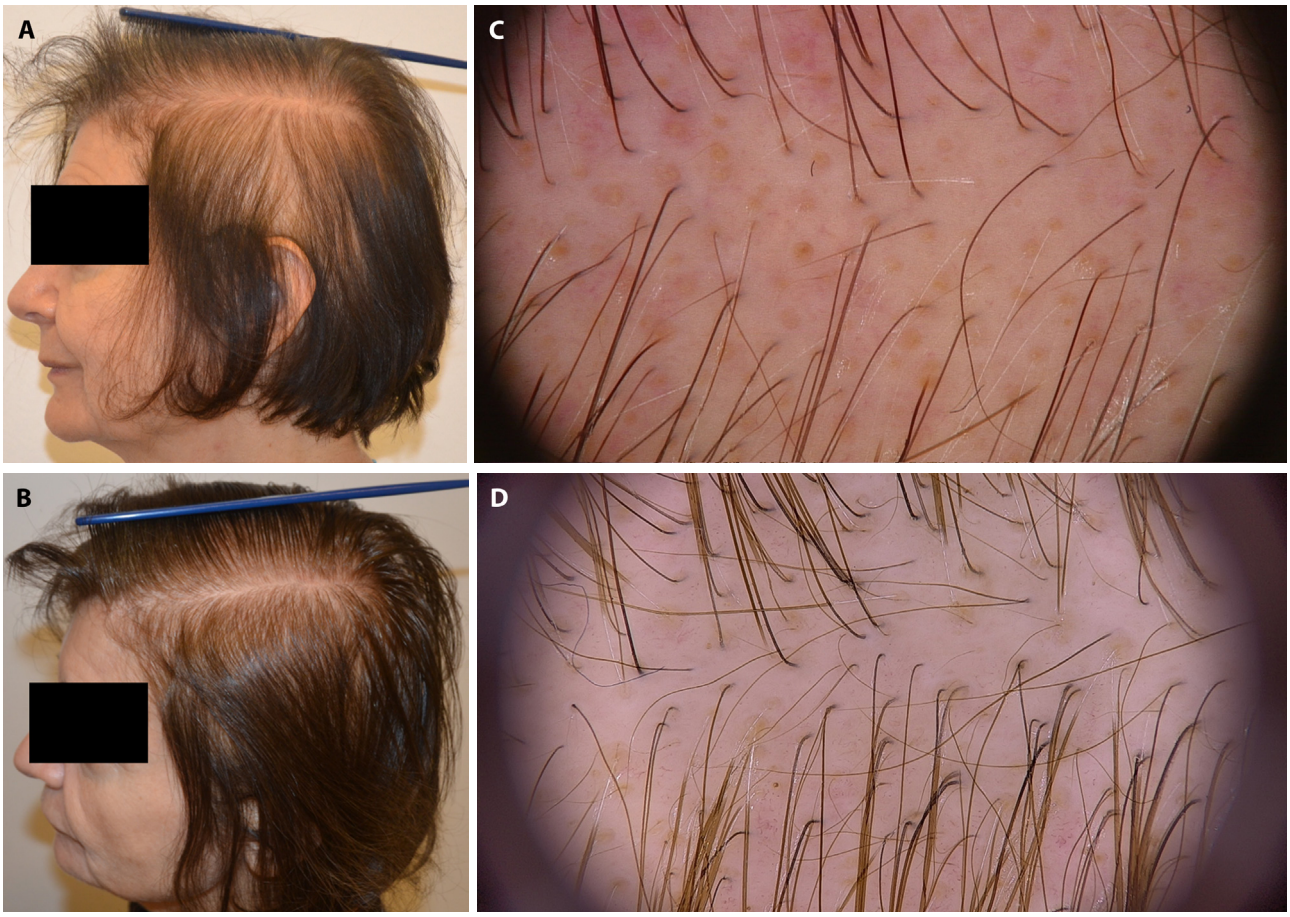

Figure 1. Clinical and trichoscopy images of a patient with persistent chemotherapy-induced alopecia (A,B) before treatment. (C,D) after 6 months of treatment with oral minoxidil 1.5 mg/day.