ISSN-e 1984-8773

SOCIEDADE BRASILEIRA DE DERMATOLOGIA

Surgical & Cosmetic Dermatology

APOIO CIENTÍFICO:

www.surgicalcosmetic.org.br/

Efficacy and safety of the 5% cysteamine cream left in overnight for facial melasma: a pilot study

Estudo piloto sobre a eficácia e segurança do uso da cisteamina 5% como terapia de contato por toda noite no tratamento do melasma facial

DOI: http://www.dx.doi.org/10.5935/scd1984-8773.2022140160

ABSTRACT
Not applicable, this is a letter.
Keywords: Cisteamina; Transtornos da pigmentação; eventos adversos

RESUMO
Não se aplica, trata-se de uma carta
Palavras-chave: *Cisteamina; Transtornos da pigmentação; eventos adversos*

Letters

Authors:
Daniel Pinho Cassiano[1]
Paula Basso Lima[2]
Joana Alexandria Ferreira Dias[2]
Ana Claudia Cavalcante Esposito[2]
Hélio Amante Miot[2]

[1] Federal University of São Paulo, Dermatology, São Paulo (SP), Brazil.
[2] Federal University of São Paulo, Department of Dermatology and Radiotherapy, Botucatu (SP), Brazil.

Correspondence:
Daniel Pinho Cassiano
Email: danielpcassiano@uol.com.br

Financial support: None
Conflict of interest: None

Submitted on: 07/07/2022
Approved on: 14/09/2022

How to cite this article:
Cassiano DP, Lima PB, Dias JAF, Esposito ACC, Miot HA. Efficacy and safety of the 5% cysteamine cream left-in overnight for facial melasma: a pilot study. Surg Cosmet Dermatol. 2022;14:e20220160.

Dear Editor,

Melasma is a common, acquired chronic hyperpigmentation of the skin photoexposed areas. It mainly affects the face of women with intermediate phototypes during their childbearing age. As melasma affects visible areas and frequently relapses after treatment, it impairs the patient's quality of life.

The standard therapy of melasma relies on photoprotection based on broad-spectrum sunscreen associated with topical bleaching agents. Among the bleachers available on the market, L-cysteamine (mercaptoethylamine hydrochloride) is an aminothiol compound with antioxidant and depigmenting properties. It inhibits tyrosinase and peroxidase without the melanocytoxic effect of hydroquinone. The recommendation for cysteamine is as a rapid contact therapy, for up to three hours, due to its irritating potential.[1-6] Nevertheless, it has been suggested that leaving it in overnight was safe and well-tolerated to treat melasma, what was not yet been investigated.

We performed a prospective open intervention pilot study between October and December 2021, aiming to assess the safety profile and the efficacy gain of cysteamine left in overnight. Ten women with facial melasma, without treatment for at least one month, were oriented to apply 5% cysteamine cream (Clarité Cysteamin, Dermage, RJ, Brazil) on their face after the facial moisturizer, leaving it overnight for two months. The daily applications should be tailored according to individual tolerability. All the participants received the same sunscreen (SPF50, PPD19) to be applied during the day.

Subjects were assessed at the inclusion and after 60 days of treatment. We evaluated the safety by the report of adverse events, such as facial erythema, scaling, and burning sensation (primary outcomes). Other parameters used were modified Melasma Area and Severity Index (mMASI), Melasma Quality of Life Scale (MELASQoL), and the difference in colorimetric luminosity (Dif*L) between skin affected by melasma and the adjacent unaffected skin (<2 cm distance). The Global Aesthetic Improvement Scale (GAIS) was used to assess the difference (T0 versus T60) in the skin appearance through standardized photographs (Figure 1).

The age of the participants ranged between 40 and 58 years old, and their phototypes were intermediate (III-V). Most had a positive family history of melasma (70%) and reported the sun as a trigger (50%).

Only four patients (40%) tolerated cysteamine overnight for seven days a week. Albeit, the main obstacle to daily use was the discomfort generated by the sulfur odor. One patient reported worsening of migraine episodes due to the bad smell. Two other patients reported nausea also caused by the odor, and one did not tolerate overnight use on any day for the same reason. Three patients (30%) reported transient mild facial erythema, scaling, and burning at the beginning of the treatment, which faded over the eight weeks.

Five patients (50%) showed a consistent lightening of the melasma through the GAIS assessment (Table 1). Table 1 presents the other clinimetric parameters. The mMASI decreased by 13.5% (CI 95%: 4% to 27%) in eight weeks. There was

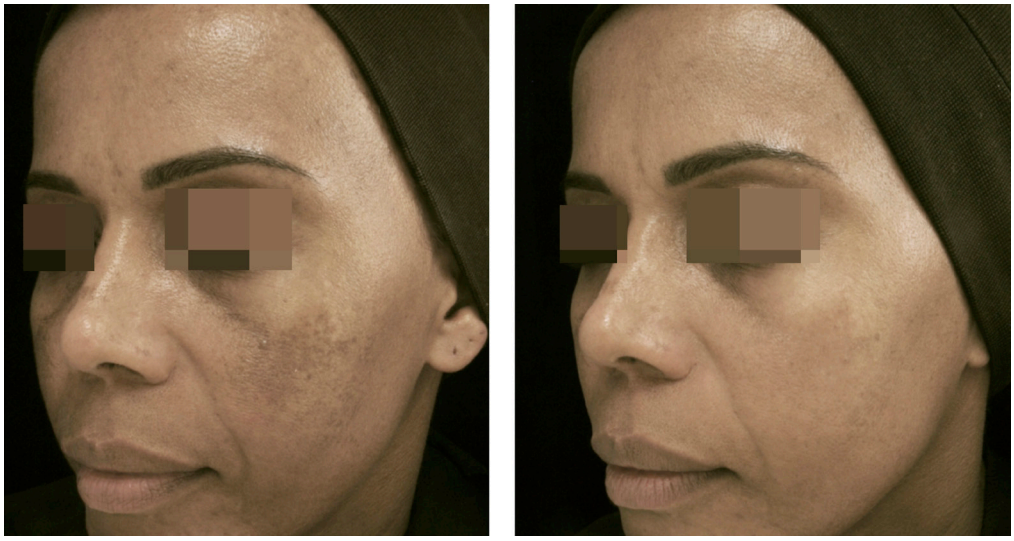

Figure 1: Patient with facial melasma treated with 5% cysteamine left-in overnight for 8 weeks

Table 1: Primary outcomes from ten participants with facial melasma treated with 5% cysteamine cream left in overnight

Outcome	D0	D60	% Reduction (CI 95%)
mMASI	7,6 (3.0)	6,7 (3.1)	-13.5% (-4.3% to -27.1%)
MELASQol	46,8 (17.6)	41,3 (13.0)	-5.5 (-18.1% to 7.0%)
Dif*L	5,1 (1.4)	4,6 (1.8)	-6.8% (-3.2 to 0.1%)

*mMASI: Modified Melasma Area and Severity Index; MELASQol: Melasma Quality of Life Scale; Dif*L: difference between colorimetric luminosity (*L)*

no difference in colorimetric parameters between D0 and D60. Also, no improvement in the quality of life score at the end of the study was observed.

Topical 5% cysteamine left in overnight proved to be safe and well tolerated. However, in a similar study conducted in the same population, 5% cysteamine left in for three hours overnight, provided an mMASI reduction of 15–33% after two months.[1] As long as the overnight use did not exceed this value, the study suggests that overnight use may not add efficacy over short contact therapy. Interestingly, in this series, the frequency of use was limited by the sulfur odor and not by skin irritation.

In conclusion, 5% cysteamine cream left in overnight is a safe option to treat facial melasma for patients who prefer not to wash it out at bedtime. New cysteamine formulations aiming at minimizing the sulfur odor can increase adherence to the treatment and improve clinical outcomes. The efficacy gain of combining cysteamine with other tyrosinase inhibitors to treat melasma is warranted. ●

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AUTHORS' CONTRIBUTION:

Daniel Pinho Cassiano ORCID 0000-0003-2615-0456
Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; data collection, analysis, and interpretation; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.

Paula Basso Lima ORCID 0000-0003-4659-2155
Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.

Joana Alexandria Ferreira Dias ORCID 0000-0001-9435-2303
Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.

Ana Claudia Cavalcante Esposito ORCID 0000-0001-9283-2354
Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.

Hélio Amante Miot ORCID 0000-0002-2596-9294
Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.