



# EUROPEAN DERMATOLOGY

VOLUME 4

---

## **The Biology of Skin Ageing**

Yolanda Rosi Helfrich, Dana L Sachs and John J Voorhees

---

## **Needle Aponeurotomy for Dupuytren's Contracture**

Jean-Luc Lermusiaux and Sophie Lahalle

---

## **Treating Chloasma – A New Dermatological Approach**

Sabine Zenker

---

## **Streamlining Cellulite Concepts**

Gérald E Piérard, Céline Devillers and Claudine Piérard-Franchimont

---

## **Defining and Diagnosing Primary and Secondary Hyperhidrosis**

Henning Hamm

---

## Treating Melasma – A New Dermatological Approach

Sabine Zenker

*Medical Director, Private Clinic for Dermatology and Aesthetic Dermatology,  
Medical Director, Dr Zenker Cosmetics, Munich, and Consultant Dermatologist, L'Oréal Paris*

### Abstract

The treatment of melasma is one of the most challenging for dermatologists because of the prolonged time to response and the substantial relapse rate when therapy is discontinued. Melasma is a common disorder of hyperpigmentation that is typically characterised by brown or grey–brown patches on sun-exposed facial areas. Melasma poses a substantial emotional and psychosocial burden on patients. As it occurs commonly in the general population it is of wide interest for control. Traditional depigmenting agents such as hydroquinone, which are highly effective and very well known, raise several safety concerns (e.g. ochronosis, atrophy, carcinogenesis and other local or systemic side effects). Therefore, one must avoid long-term exposure, especially when high concentrations are prescribed. Hydroquinone is one of the best depigmenting agents but there are many other effective drugs to treat pigmentation disorders, including kojic acid and tretinoin. Chemical peels are one of the preferred indications for hyperpigmentation. The efficacy of a medical antichloasma peeling depends on many very important factors: the percentage and combination of depigmenting agents, the consistency and composition of the treating agent/vehicle, the method and time of application, the peeling intensity and the experience of the doctor. We have established a new dermatological peel to treat melasma. Our experience is based on a 4.5-year monitoring study that included over 300 patients. The DepiFastPeel® (DFP®) is a superficial to medium-depth chemical peel. It is applied in the form of a masque comprising peeling and depigmentating ingredients. It stays on the skin for several hours. After four to five days the superficial layer of the skin peels off gently. The post-peeling treatment consists of a cream that must be applied for approximately three months. The DFP is effective, painless and requires only a short down-time. It never causes side effects such as scarring or worsening of chloasma. We state and want to emphasise that the use of depigmenting agents such as hydroquinone, kojic acid and tretinoin in combination is much more effective. A deep but superficial peeling of the skin is essential for a good clinical outcome. Application of the agents in DFP in the form of a specially designed peeling mask is safe and easy. A home-care programme after the treatment is indispensable. The DFP can be a very effective method of treating chloasma without side effects.

### Keywords

Chloasma, melasma, medical peeling, depigmenting agents

**Disclosure:** The author has no conflicts of interest to declare.

**Received:** 19 February 2009 **Accepted:** 30 April 2009

**Correspondence:** Sabine Zenker, Maximilianstrasse 36, D-80539, Munich, Germany. E: kontakt@dr-zenker.de

The treatment of melasma is one of the most challenging from the point of view of a dermatologist. As it is a common condition, it is of broad interest for control. Hypothetically, the condition is self-limiting. However, spontaneous resolution is time-consuming and unpredictable and it may take months to years to resolve normal pigmentation. The major problems in treating chloasma are the prolonged time to response, the inconsistency of response to treatments, the unpredictability regarding the result after any procedure and the substantial relapse rate when the therapy is discontinued. Treating this dyschromia is also challenging due to the feared post-inflammatory hyperpigmentation after inflammation-inducing therapies.

Melasma poses a substantial emotional and psychosocial burden on patients. Many undergo multiple therapies, from cosmetic treatments to ineffective or even aggressive medical treatments, that do not solve their problem or even make it worse. Some patients spend a fortune on treatments over the years. Others hide away, feeling ashamed and stigmatised.

Despite the fact that melasma is a benign and easily diagnosed disease, clinicians must rule out melanoma and its precursors and must be able to distinguish and diagnose skin manifestations of systemic diseases.

My personal non-satisfying and not very promising experience in treating patients with many of the 'classic' currently available therapies motivated me to take a new path in treating chloasma. As a peeling expert, I decided to invent an individual, adjustable, assessable, clearly defined and dosable medical peeling treatment. The goals of treatment are to treat and manage chloasma effectively, to cause no side effects, to treat in a painless and easy-to-perform manner and to have an appropriate management tool in case of an eventual relapse of the disease. In order to be in a position to treat chloasma successfully and properly, it is important to be reminded of the basic features of the disease.

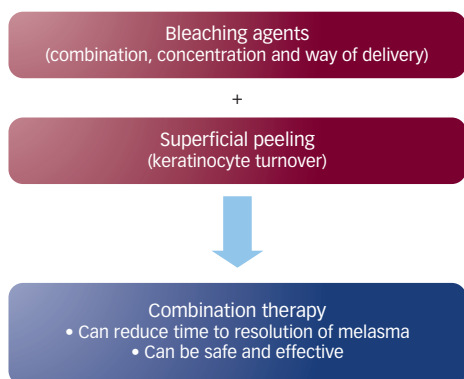
### Melasma

Melasma is a common disorder of hyperpigmentation, typically characterised by brown or grey–brown patches on sun-exposed

**Table 1: Topical Depigmenting Agents**

Hydroquinone (HQ) (1,4 dihydroxybenzol)
Tretinoin (trans-retinoic-acid)
Kojic Acid (5-hydroxy-2-(hydroxymethyl)-4-pyrone)
Salicylic acid
Alpha-hydroxy-acid (AHA)
Vitamin C (ascorbic acid)

**Figure 1: Principles of Treatment**



facial areas.<sup>1</sup> It results in pigmentary dischromia or hypermelanosis of the face, neck and décolleté, and is characterised by well-defined, relatively symmetrical light brown, brown or grey patches and macules on sun-exposed facial or bodily areas. Pigment may be variable in depth; it can occur epidermally, dermally or in both of these skin layers.<sup>2</sup>

The pathophysiology of chloasma is uncertain. It is mostly due to exposure to sunlight. Chloasma certainly worsens due to ultraviolet (UV) exposure and, consequently, is worse in summer. Furthermore, other causes of melasma are a certain genetic predisposition, hormonal activity (progesterone),<sup>3</sup> cosmetics, perfume and photosensitising agents or medication (e.g. phenytoin, antibiotics or chemotherapeutic medications). Chloasma can be related to a certain ovarian or thyroid dysfunction or can occur idiopathically. It is found in all races, is more common in women, is rare before puberty and after menopause and is more often found in darker skin types. Melasma is often linked to the occurrence of acne.

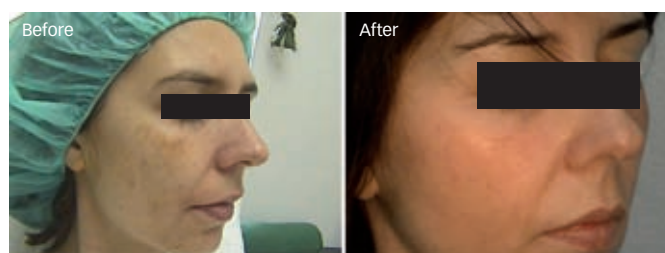
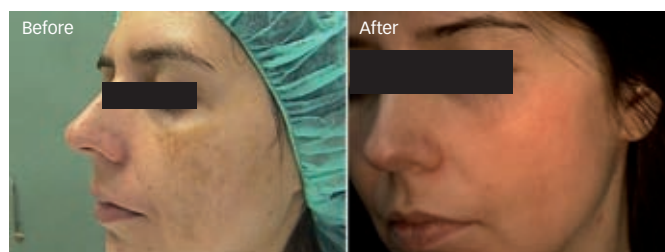
The physical examination consists more or less of a description of the clinical findings. The typical clinical patterns of melasma in the face are centrofacial (63%), malar (21%) and mandibular (16%).<sup>2</sup> In addition, it is rarely found on the forearms or the décolleté. The intensity of the pigmentation varies and is darker in darker skin types.

There are not many options available for apparative examinations. Epidermal pigment can be detected using a Wood's lamp (340–400nm). An objective way to detect the location of the pigment would be a punch biopsy. Melanin is increased in the keratinocytes in the basal and suprabasal layer of the epidermis, in the superficial and mid-dermis within macrophages or in both layers. However, the enthusiasm for such an intervention is small.

**Therapeutic Options**

Melasma develops and resolves gradually. The management of skincare for skin tenting to develop chloasma is indispensable. Every

**Figure 2: Patient Who Suffered from Chloasma After Laser Treatment for Over Two Years**



**Figure 3: No Pre-treatment, Severe Acne for Five Years, Superficial Medical Peels with Worsening of the Pigmentation, Oral Antibiotics Over Months**



**Figure 4: Chloasma Occurred Under Systemic Chemotherapy Due to a Colorectal Carcinoma, No Previous Therapy**



treatment must include the use of sunscreen and abstinence from cosmetics rich in perfume, tensides and preservatives.

In my opinion, chemical peels are one of the preferred indications for the treatment of this hyperpigmentation. The intensity and depth of chemical peels is very important for the clinical outcome. The deeper the peel acts, the more often post-inflammatory hyperpigmentation occurs. Therefore, a chemical peel has to act superficially but as effectively as possible. The addition of bleaching agents is indispensable. The mainstay of treatment remains topical depigmenting agents. Hydroquinone (HQ) is most commonly used. Pharmacotherapy with combinations of HQ, retinoids, glycolic and salicylic acid peels and/or topical steroids can be promising.

Quick fixes with destructive modalities (cryotherapy, medium-depth chemical peels, lasers and intense pulsed light yield)<sup>4</sup> can lead to

unpredictable results and are associated with a number of potential adverse effects.<sup>5,6</sup>

Our approach is to use topically acting agents. Bleaching agents can be used in combination with superficially peeling agents to accelerate the keratinocyte turn-over. Traditional depigmenting agents, such as hydroquinone, that are highly effective raise several safety concerns (for example ochronosis, atrophy, contact dermatitis, carcinogenesis and other local or systemic side effects). Therefore, one must avoid long-term and uncontrolled exposure, especially when using high concentrations. However, HQ is one of the best depigmenting and very well known agents<sup>4</sup> (see *Table 1*). Furthermore, there are many other effective drugs to treat pigmentation disorders (e.g. kojic acid and tretinoin). Finally, the combination of these bleaching agents with superficial peeling agents can be a very appropriate and effective way of managing chloasma.

The efficacy of a medical antichloasma peel depends on many factors: the percentage and the method of combining depigmenting agents, the consistency and composition of the treating agent or vehicle, the method of application, the peeling intensity and, last but not least, the experience of the doctor.

## DepiFastPeel® (DFP®)

We established a new dermatological medical peel to treat chloasma. Our experience is based on a 4.5-year monitoring study that included over 300 patients. The DepiFastPeel® (DFP®) is a superficial to medium-depth chemical peel. The working agents are HQ, trans-retinoic-acid, kojic acid and, as peeling agents, salicylic acid, alpha-hydroxy-acid and ascorbic acid. These agents have to be delivered to and into the skin in the most effective way. Our method of delivering potential agents is a mask. Application of medical ingredients via a mask provides a prolonged application time and a way to regulate delivery of the working agents. Galenics of the mask is indispensable for the clinical result in terms of delivery of ingredients and reciprocal stabilisation of the working agents. The dosage of depigmenting agents should be as low and as short as possible for a good clinical result (see *Figure 1*).

The mask stays on the skin for several hours. The duration of this therapy is reliant on factors including skin type, the severity of the chloasma and the skin condition. There are also the expectations of the patient and the doctor to consider in terms of efficacy of the treatment and acceptance of down-time. After four to five days the superficial layer of the skin peels off gently. As melasma develops gradually, the resolution of melasma is gradual. At that point in the procedure, the chloasma still has not disappeared; the patient still has to undergo a post-peel treatment at home with a specially designed post-peel cream for approximately three months. This cream consists of the same working agents as in the mask but in very low concentrations. In addition, the doctor has to

take care of a strict post-peel management protocol. Daily skincare without perfume and preservatives as well as sufficient sunscreen is very important.

## Results

The DFP is effective, painless, causes only short down-time and can be an appropriate tool in the management of chloasma. All patients responded well to the therapy, and there was never any darkening of the pigmentation. The result was not satisfactory in five patients. One suffered from chloasma for more than 10–15 years and had tried multiple therapies such as laser, kryotherapy, dermabrasion and multiple topically depigmenting ointments. The others suffered from severe acne with remarkable post-inflammatory hyperpigmentation or exposed themselves to UV radiation without any control over or respect for the condition of their skin (see *Figures 2–4*).

This sort of peel never causes side effects such as scarring or worsening of the chloasma. Bacterial superficial infections are treatable with antibiotic ointments, and if a herpes labialis occurs the patient must take oral medication to prevent an eczema herpeticum.

## Conclusion

It is important to emphasise that the use of certain depigmenting agents such as HQ, kojic acid and tretinoin is much more effective when these elements are combined.<sup>7–9</sup> Monotherapy is seldom effective. The depigmenting agents should act effectively in the lowest possible concentrations and the post-operative phase should be as short as possible.

A deep but superficial peeling of the skin is essential for a good clinical outcome. The application of the agents in the form of a specially designed peeling mask is safe and easy to perform. A home-care programme after the treatment is indispensable.

The DFP can be a very effective and safe way to treat and manage melasma. We conclude that a patient suffering from melasma needs a life-long individually shaped regimen of skin treatment and care. ■



Sabine Zenker runs a private dermatology and aesthetic dermatology clinic as well as a specialised institute for cosmetic medicine and spa, Dr Zenker Cosmetics. She gives lectures and medical training courses nationally and internationally in the field of aesthetic dermatology. As her goal is to implement new technologies and treatments in her daily practice, as well as to invent new therapeutic strategies, she has already established some of the most advanced techniques in Germany.

She is the consultant dermatologist for L'Oréal Paris in Germany and Switzerland, writes articles for press and gives interviews for television. She received her medical training at the Ludwig-Maximilians University Faculty of Medicine, University College London, Pitié-Salpêtrière Paris and the Memorial Sloan Kettering Cancer Center in New York, and her dermatology and aesthetic dermatology training at Ludwig-Maximilians University Faculty of Medicine and Dr Luitgard West.

1. Barclay L, Primary Care Management of Skin Pigmentation Disorders, *Medscape Medical News*, 2009.
2. James W, Berger T, Elston D, *Andrews' Diseases of the Skin: Clinical Dermatology*, 10th edition, Saunders, 2005.
3. Bolanca I, Bolanca Z, Kuna K, et al., Chloasma—the mask of pregnancy, *Coll Antropol*, 2008;(Suppl. 2):139–41.
4. Prignano F, Ortonne JP, Buggiani G, et al., Therapeutical approaches in melasma, *Dermatol Clin*, 2007;25(3):337–42.
5. Pérez-Bernal A, Muñoz-Pérez MA, Canacho F, Management of facial hyperpigmentation, *Am J Clin Dermatol*, 2000;1(5):261–8.
6. Prignano F, Ortonne JP, Buggiani G, et al., Therapeutical approaches in melasma, *Dermatol Clin*, 2007;25(3):337–42.
7. Chan R, Park KC, Lee MH, et al., A randomized controlled trial of the efficacy and safety of a fixed triple combination (fluocinonone acetonide 0.01%, hydroquinone 4%, tretinoin 0.05%) compared with hydroquinone 4% cream in Asian patients with moderate to severe melasma, *Br J Dermatol*, 2008;159(3):697–703.
8. Gupta AK, Gover MD, Nouri K, Taylor S, The treatment of melasma: A review of clinical trials, *J Am Acad Dermatol*, 2006;55:1048–65.
9. Rendon M, Cardona LM, Bussear EW, et al., Successful treatment of moderate to severe melasma with triple-combination cream and glycolic acid peels: a pilot study, *Cutis*, 2008;82(5):372–8.