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JCD Journal of Cosmetic Dermatology WILEY





with mean age of 30 years at onset.

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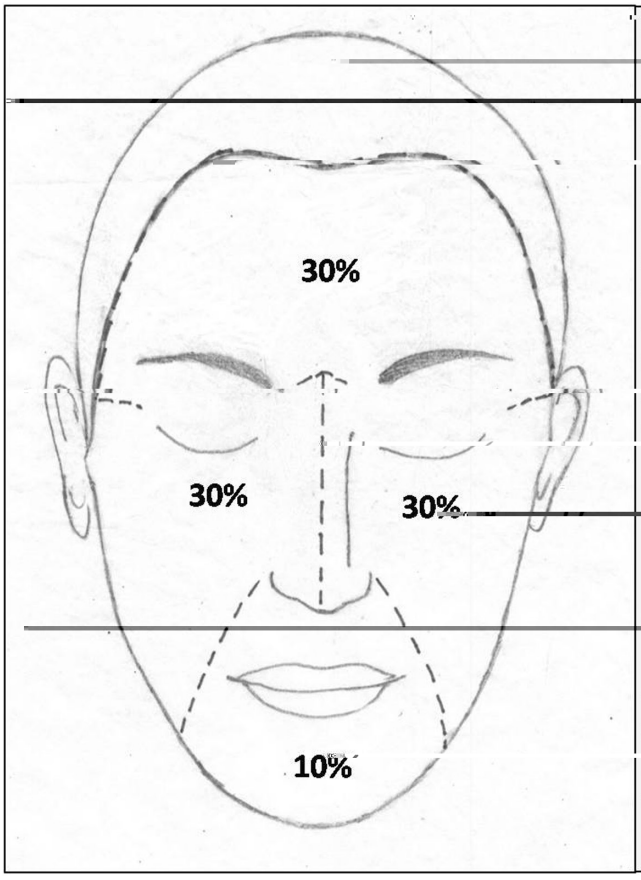

1. **MASI score** is calculated by dividing the face into four areas; and each area is weighted such that the forehead (F), right malar area (MR), and left malar area (ML) are 30% each, and the chin (C) is 10%.
2. Amount of pigmentation involved by melasma in these four areas (F, R, L, and C) is graded on a numerical rating
   - 0 = no involvement
   - 1 = less than 10% involvement
   - 2 = 10–29% involvement
   - 3 = 30–49% involvement
   - 4 = 50–69% involvement
   - 5 = 70–89% involvement
   - 6 = 90–100% involvement
3. Severity of melasma is graded on two factors, darkness (D) of melasma compared to the normal skin and homogeneity (H) of hyperpigmentation on a scale from 0 to 4: The rating scale for both darkness and homogeneity of melasma is
   - 0 = absent
   - 1 = slight
   - 2 = mild
   - 3 = marked
   - 4 = maximum

1. MASI score is then obtained by adding the values of sum of severity ratings.
2. **The final formula for MASI Score** = 0.3 (DF + HF) AF + 0.3 (DMR + HMR) AMR + 0.3 (DML + HML) AML + 0.1 (DC + HC) AC.
3. **The total MASI score is 0 to 48.**

The Melasma Area and Severity Index (MASI) score. The amount of pigmentation of melasma is evaluated in each of the four

		Quality of evidence for
	HQ2% + Tretinoin 0.05% + Fuocinolone	
	HQ2% + Tretinoin 0.05% + Dexamethasone (0.01%)	
	Modified KF + Glycolic Acid (GA + HQ 4% + GA 10%	
	Azelaic acid (20%) + Retinoic acid 0.05%	

Note

ing a shorter thermal relaxation time (50–500 nano sec) and longer

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Non-hydroquinone-based therapies for melasma

α β

α

α

α β

uva ursi

Aspergillus

trations, especially during initial 2 weeks of topical therapy.

p

tion decreases evidently in a dose-dependent manner by 5–7 weeks of treatment that needs to be continued at least for 3 months to a placebo group at 12 weeks without significant adverse effects.

20% over 24 weeks without causing itching and burning noted with

5.2.1 | Triple combination treatments

Classification of chemical

Baker Gordon phenol formula: 3 ml phenol, 2 ml water, 8 drops of hexachlorophene (septisol), and

than hydroquinone 4% alone from 4 weeks onwards in a compara

>

improvement occurred in 73% at 8 weeks compared with 5% and

8 weeks. The adverse events were mild in 68%, moderate in 25%,

also had two IPL treatments 2 and 6 weeks after suspending topical

control cream and IPL at 6 weeks and end of 10-week study period.

and 8 weeks of treatment with HTF triple combination in 135 of 300 patients (mean age 42 years) with skin phototypes I through V in a

asma at 12 weeks with effect lasting up to 16 weeks. The combina

application of mequinol/tretinoin and sunscreen with SPF ≥25 for 24 weeks to treat solar lentigines and related hyperpigmented le

5.2.2 | Dual combination treatments

tation after 12 weeks of treatment that was more significant than

Pityrosporum

to treat melasma even as monotherapy but needs at least 24 weeks

α

Aspergillus orzae *Acetobacter* *Penicillium*

following topical deoxyarbutin treatment for 12 weeks in patients

freckles applied for 5–18 weeks.

6.6.3 | Intralesional tranexamic acid

4 mg/ml solution from 100 mg/ml commercial injectable solution for

reported significant decrease in MASI score in 8–12 weeks

antifibrinolytic doses of 0.5–1.5 g given three times daily or up to 2.0–4.5 g/day. It is given intravenously as 10 mg/kg immediately be

peak plasma concentrations are reached within 3 h after oral admin

turn around period of 2–3 days are real drawbacks. The use of TA

6.6.1 | Tranexamic acid in melasma

significantly after 2–3 weeks of TA in a patient under treatment

6.6.4 | Oral tranexamic acid

Oral TA in doses varying between 500 mg/day and 2.25 g/day for up to 6 months have been used alone or as adjuvant with almost equal

aged 24–60 had their melasma reduced in severity with 1–1.5 g daily oral TA in 10 weeks. Zhu et al. compared oral 250 mg TA, vitamin C (0.2 g) and vitamin E (0.02 g), all given thrice daily to treat 128 pa

intravenous dose (500 mg every 2–4 weeks administered directly or

riod of 6–8 weeks. They observed statically significant reduction in

6.6.2 | Topical tranexamic acid

min C (0.3 g/d), and vitamin E (0.1 g/d) in controls given for 2 months

oral TA 250 mg given twice daily and 33% improved further after

Clinical studies using oral tranexamic acid in the treatment of melasma

	250 mg once daily	500 mg twice	4 months	↓	Although, 500 mg twice daily
					250 mg once daily was also
	1.5 g/day + Vitamin B, C, E				Effect onset mostly in 4 weeks
	+			↓ $p < 0.05$	
				> ↓ ↓	
	500 mg/day + IPL-Nd:Yag		6 months	↓ $p < 0.005$	
			10 weeks		
	750 mg/day + Vitamin C, E		6–8 weeks	> ↓ > ↓ ↓ $p < 0.001$	
	750 mg/day + Vitamin C, E		2 months	> ↓ > ↓ $p < 0.01$	
	500 mg/day		6 months	> ↓ > ↓ ↓	
>	2.25 g/day		8 weeks	$p < 0.001$)	

Clinical studies for cosmeceuticals and botanicals in the treatment of melasma

Oral ginseng (3 g)						
	N					
	x 12 weeks					
		Morus				
	alba					
	applied for 8 weeks					
	applied for 8 weeks					
Topical Zinc sulfate versus HQ				Zinc sulfate versus HQ		
	8 weeks					
	Glycine soja					

7.2.2 | Vitamin E

α

α

7.2.3 | Polypodium leucotomos

Polypodium leucotomos

P. leucotomos

12 weeks. However, Ahmed et al.

P. leucotomos

7.2.4 | Topical rucinol

randomized split-face study on 23 Korean women after 8 weeks

cinol 0.3% serum applied twice daily for 12 weeks on treated side as

7.2.5 | Cysteamine

without the concerns for adverse effects associated with triple combination therapy

Available as Cyspera® (cysteamine + isobionic-amide complex) 5%

of adverse effects. Initial results are visible after 6 weeks of daily use of Cyspera/cysteamine cream applied for 15 min to the affected skin.

Cyspera Intensive

+

Cyspera Neutralize

Cyspera Boost

decrease in MASI score after 4 months of application compared

7.2.6 | Sunscreens and camouflage makeup

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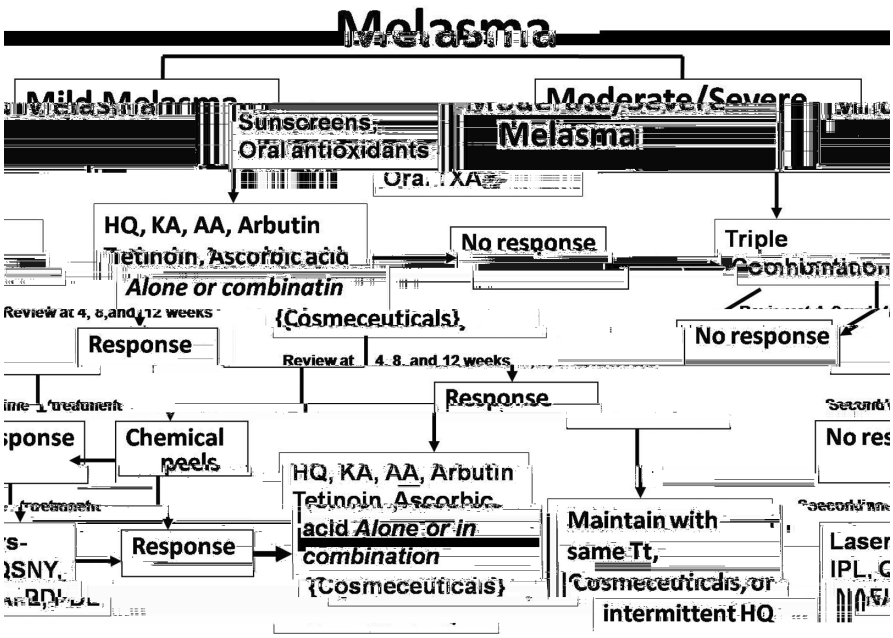

Treatment algorithm for melasma. Before actual treatment, other causes of facial pigmentation such as post-inflammatory

ilar lines. A recent study has suggested that TA 500 mg twice daily and follow-up treatment with TA 250 mg or a lesser dose once daily

Polypodium leucotomos

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Dermatol Clin

Indian J Dermatol

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J Eur Acad Dermatol Venereol

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