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Original Research Paper

Dermatology

CLINICOEPIDEMIOLOGICAL STUDY OF PATTERNED FACIAL PIGMENTATION

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KEYWORDS :

INTRODUCTION (1/2)

- Facial pigmentation is a common dermatological concern
- AIPFP: acquired, idiopathic, symmetric patterned facial hyperpigmentation
- An umbrella term represents non-inflammatory localized or symmetrical hyperpigmented areas that follow anatomic distributions over the face
- Tracks embryologic melanocyte migration; aligns with Blaschko's lines.
- Represents functional cutaneous mosaicism.
- Patterns commonly involve the periorbital, zygomatic, and perioral regions.[2]
- High prevalence among darker skin types

Introduction (2/2) & Rationale

- Distribution of these patches also corresponds closely with pigmentary demarcation lines (PDLs), suggesting an underlying mosaic or constitutional pattern of pigmentation.[2,]
- Accentuated by physiological and environmental factors such as ultraviolet exposure and hormonal influence
- Few detailed studies available.
- Under-recognized; often mislabelled as melasma.[2]
- Need to define patterns and triggers in our cohort

Aim:

- To evaluate clinical patterns and epidemiological profile.

Objectives:

1. Study demographic and clinical parameters.
2. Classify facial pigment patterns.
3. Identify risk factors (UV, cosmetics, family history).

Inclusion Criteria

- Acquired, bilateral, symmetrical patterned facial pigmentation
- Well-defined borders, no surface change
- Adults ≥ 18 years attending dermatology OPD
- Consent to evaluation without active treatment during study period

Exclusion Criteria

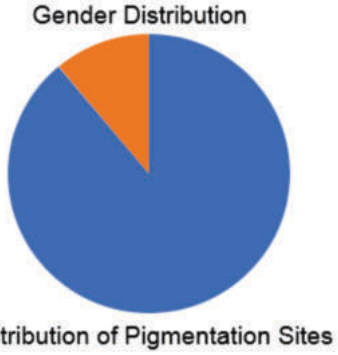
- Melasma, LPP, Riehl's dermatitis, or other facial dermatoses
- Drug-induced, photosensitive, or post-inflammatory pigmentation
- Patients on steroids or depigmenting agents (topical/systemic)
- Pregnant or lactating women

MATERIALS & METHODS

- **Design:** Prospective observational study
- **Duration:** 12 months
- **Sample Size:** 172
- **Setting:** Dermatology OPD
- **Workflow:** Screening → Inclusion/Exclusion → Data collection → Analysis
- Detailed History: age of onset, progression, family history, aggravating factors
- Clinical examination: distribution, color, and morphology of lesions
- Patterns correlated with facial Blaschko's lines (PDL-F, G, H)
- Data compiled and analyzed using descriptive statistics.

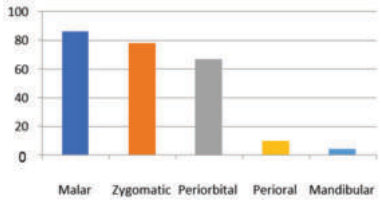
Demographic Profile

- Mean age: 35.4 ± 14.2 years (18–65).
- Female : Male = 8:1 (88.9% females).



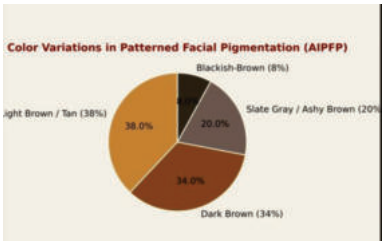
Clinical Patterns of Pigmentation

Malar: 86.1%,
Zygomatic: 77.8%,
Periorbital: 66.7%,
Perioral: 9.7%,
Mandibular: 4.2%.
Multiple site involvement : 76.4%



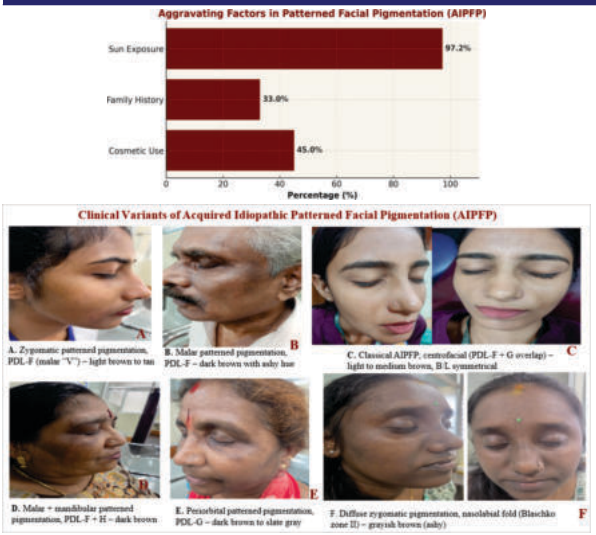
Morphology & Progression

- Color: Light to dark brown (95.8%).
- Borders: Sharp and well-demarcated (79.2%).
- Pattern: Homogenous (88.9%).
- Family history: 26.4%.
- Progression: Gradual in 87.5%.
- Zygomatic pattern most distinct



Aggravating Factors

Sun exposure: 91.7%.
Cosmetic use: 60%.
Family predisposition: 26.4%.



DISCUSSION (1/2)

- Female preponderance parallels melasma, (Blaschko's lines, mosaicism, sun exposure).
- Onset in socially active years (20–40 yrs).
- Manifest around puberty and tend to persist lifelong with minimal change
- Suggests link to Blaschko's lines/mosaicism
- Follows pigmentary demarcation lines- abrupt, physiological transition zones between lighter and darker skin
- Explains symmetry, stability, and familial clustering.
- Because PDLs often remain stable and resist standard pigment-lightening therapies recognizing them avoids unnecessary aggressive treatment .[2]

DISCUSSION (2/2)

- Comparison with melasma: Sharp borders & periorbital continuity differentiate from melasma.
- Distribution: zygomatic vs centrofacial.
- Borders: sharp vs ill-defined.
- Family history and UV aggravation common.

Disease Progression:

- Gradual onset; slow progression; persists for years.
- Often accentuated by UV and hormonal triggers; may remain refractory despite therapy
- Added treatment refinement- Topical, Procedures: QS-Nd:YAG laser, superficial chemical peels.
- Maintenance: Sunscreen, antioxidants, camouflage, counseling

Limitations

- Single-center study — findings may not reflect all ethnic or regional patterns
- Histopathological correlation not performed in all cases
- Cross-sectional design — lacks long-term follow-up or therapeutic response data
- Subjective color assessment without instrumental pigmentation quantification
- Possible recall bias regarding aggravating factors and cosmetic use

Treatment Overview (Algorithm)

- Photoprotection Topicals Procedures Maintenance
- Photoprotection: broad-spectrum; tinted inorganic filters; strict re-application.[4]
- Topicals: non-steroid depigmenters; antioxidants; avoid steroid mixes.[4]
- Procedures: QS-Nd:YAG laser ; very superficial peels.[9]
- Maintenance: behavior change + camouflage; slow taper; adherence.[9]

CONCLUSION

- AIPFP reflects developmental mosaicism; aligns with PDLs/Blaschko's lines.[157]
- Distinct entity predominantly in females.
- Integrate into pigmentary disorder classification.
- Zygomatic area commonly affected.
- UV radiation major aggravating factor
- Holistic management: sun protection, cosmetic caution.
- Recognition key to targeted therapy.
- Early recognition avoids misdiagnosis as melasma.
- Consider psychosocial counseling.

Key Message

- Patterned pigmentation follows Blaschko's lines (mosaicism).
- Recognizing AIPFP prevents overtreatment; photo-protection + conservative care are cornerstone.

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