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RESEARCH ARTICLE
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"STUDY OF PATCH TEST RESULTS IN PATIENTS PRESENTING WITH FACIAL MELANOSIS."

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Abstract

AIM & OBJECTIVES:

AIM: To assess the patch test results in all patients attending the OPD for various disorders of facial melanosis.

OBJECTIVES : To identify any possible role of contact allergy as cause of disorders of facial melanosis.

MATERIALS & METHODS:

● Study design – Observational cross sectional study
● Study Population – 50 patients attending D.V.L outpatient department.
● Duration of the Study: 1 year

INCLUSION CRITERIA:

● All the patients presenting with facial melanosis.
● Patients willing to give an informed consent.

Exclusion Criteria:

● All the patients taking oral corticosteroids or any other immunosuppressant for any disease were excluded from the study.
● pregnant females and patients taking oral contraceptive pills.
● Patients unwilling to give an informed consent.

RESULTS AND ANALYSIS: Fifty patients consulting dermatology outpatient department with complains of face and neck hyperpigmentation were tested with patch test of Indian Standard battery and Cosmetic & Fragrance series.Among the fifty patients patch tested, 33 (66%) patients showedpositive reactions.

More cases of PCD, EDP, PIH and LPP showed positive reactions to patch tests which shows a positive association between contact hypersensitivity and these conditions.
CONCLUSION: Patch testing along with personal cosmetics used is a useful aid in identifying etiology of hyperpigmentary disorders.

INTRODUCTION:
Disorders of hyperpigmentation of face and neck collectively termed as Facial melanosis (FM) are a common presentation in Indian patients, causing cosmetic disfigurement and psychological impact.Diagnosis is mostly clinical .These various disorders have differing etiologies but commonly leading to pigmentary incontinence and increased melanin in epidermis and dermis. One of such understudied etiology is hypersensitivity reaction to constant exposure of low level of allergens presenting as facial melanosis. Hence the role of contact sensitivity as a probable cause of facial melanosis should not be overlooked. Identifying the culprit allergen causingcontact sensitivity and avoiding the same will aid the early prevention and management of Facial Melanosis. Easy availability of large number of skin lightening creams have resulted in their abuse with very little information about their safety profile and side effects. These are available as the counter preparations, ingredients of which are scarcely known. Paradoxically they have been causing hyper melanosis rather than skin lightening.5 Therefore this study is aimed to look into the impact of contact sensitivity in developing facial melanosis.

AIM: To assess the patch test results in all patients attending the OPD at tertiary care centre consulting for various disorders of hyperpigmentation affecting the face and neck.

MATERIALS &METHODS: The present study entitled "Study of patch test results in patients presenting with facial melanosis" was conducted at Department of D.V.L, Index Medical College Hospital and Research Centre, Indore (M.P.) during the period of 18 months. The study was approved by the ethics committee of Index Medical College. My study is an observational cross sectional study performed on minimum 50 patients attending D.V.L outpatient department. Study Design: Observational cross sectional study Duration of the Study: 18 months All the patients presenting with facial melanosis.were included in studyAll the patients taking oral corticosteroids or any other immunosuppressant for any disease were excluded from the study. Female patients with pregnancy and female patients taking oral contraceptive pills are excluded as Melasma is a common feature in these conditions. Patients unwilling to give an informed consent were also excluded.Sample Size: 50 Methodology :All the patients affected with visible hypermelanosis over the face, neck and other body parts were taken up for study. Complete history was taken along with history of exposure to occupational allergens environmental allergens and use of cosmetics and fragrance. Patients were diagnosed among clinical entities of facial melanoses based on clinical examination and history. Biopsy was taken wherever necessary to confirm clinical diagnoses of facial melanosis.After explaining the procedure in detail, informed consent was taken.A patch test with Indian Standard series and Cosmetic & Fragrance series was performed on these patients Allergens were taken out from refrigerator 15 minutes before testing. After marking the back of patch test unit, protective foil is removed and patch test unit is placed on the table with aluminum chambers (Finn Chamber) facing up. The protective foil is fixed longitudinally along the edge of patch test unit to facilitate handling. Allergens in length of 2 mm was put in the center of aluminum chambers. Excess allergens were to be avoided. For aqueous or alcohol based allergens a filter paper wet with a drop of allergen was taken and placed on the aluminum chambers. The allergens were applied on the patch test unit. Upper back was cleansed gently with spirit but rubbing was avoided .The patch test units will be taped on the back in vertical rows starting from left scapular region up to right scapular. The number and exact position of patch with number of allergens will be noted in the file.

Interpretation of Patch test results: Patients were advised to report back after 48 hours. The scanpor tape with finn chambers was removed and reading was taken one hour later after the removal of patches.

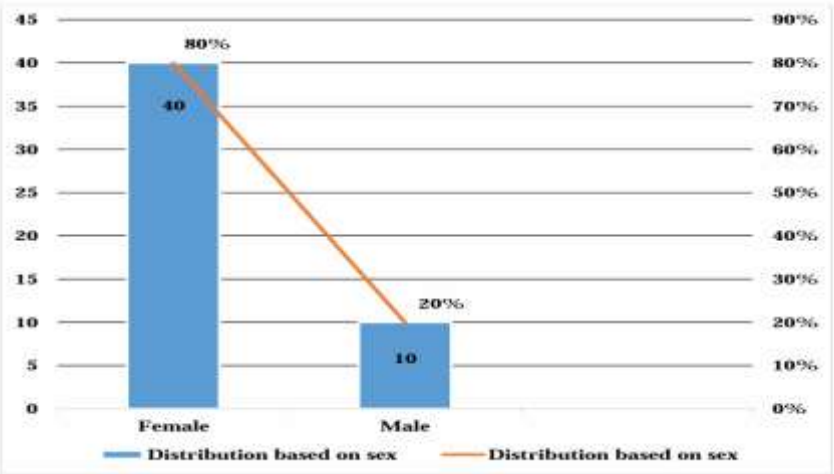
OBSERVATIONS & RESULTS

Distribution based on Age

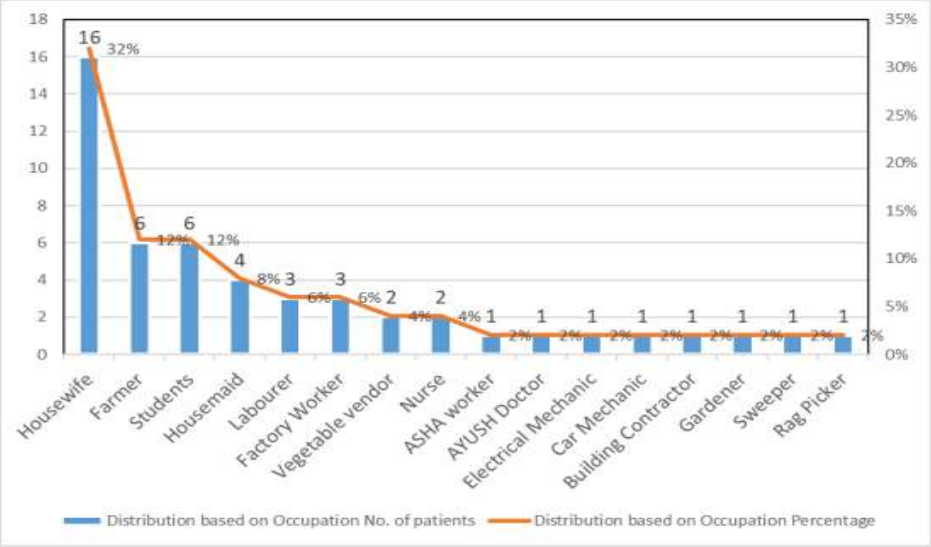
Age Group	Number of Patients	Percentage
15-24	10	20%
25-34	14	28%
35-44	19	38%
45-54	5	10%
55-64	2	4%
Total	50	100%

Distribution based on Sex

SEX	NUMBER OF PATIENTS	PERCENTAGE
FEMALE	40	80%
MALE	10	20%
TOTAL	50	100%

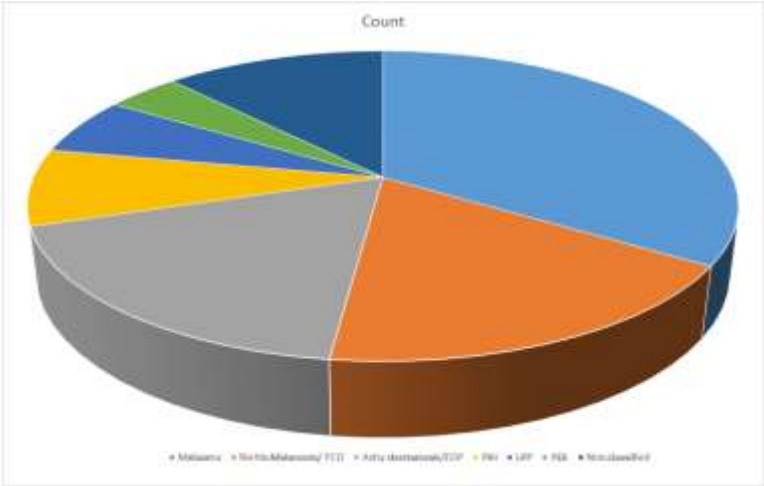


Distribution based on Occupation



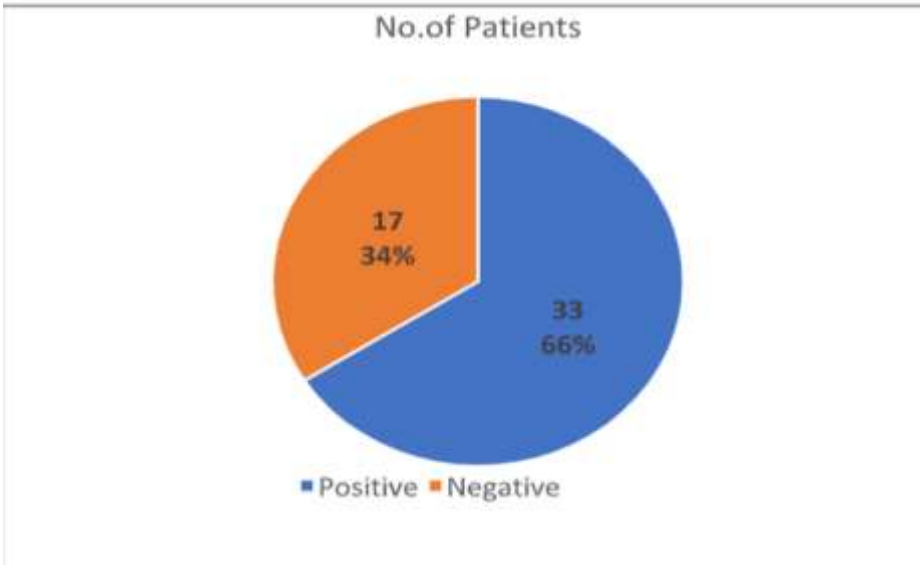
Distribution based on Clinical Diagnosis

Entity	Count	Percentage
Melasma	17	34%
Riehls Melanosis/ Pigmented contact dermatitis(PCD)	9	18%
Ashy dermatosis/Erythema dyschromicum perstans(EDP)	9	18%
Post Inflammatory Hyperpigmentation(PIH)	4	8%
Lichen planus pigmentosus (LPP)	3	6%
Pigmentary Demarcation Line(PDL)	2	4%
Not classified	6	12%
Total	50	100%



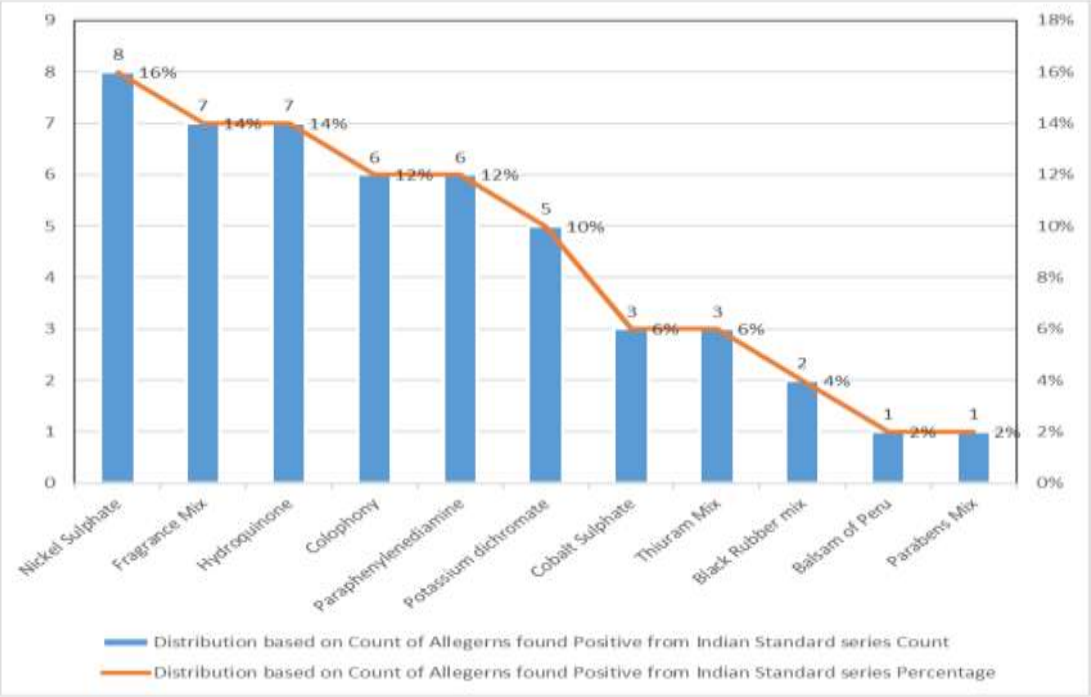
Distribution based on Patch Test Result

RESULT	NUMBER OF PATIENTS	PERCENTAGE
POSITIVE	33	66%
NEGATIVE	17	34%
TOTAL	50	100%



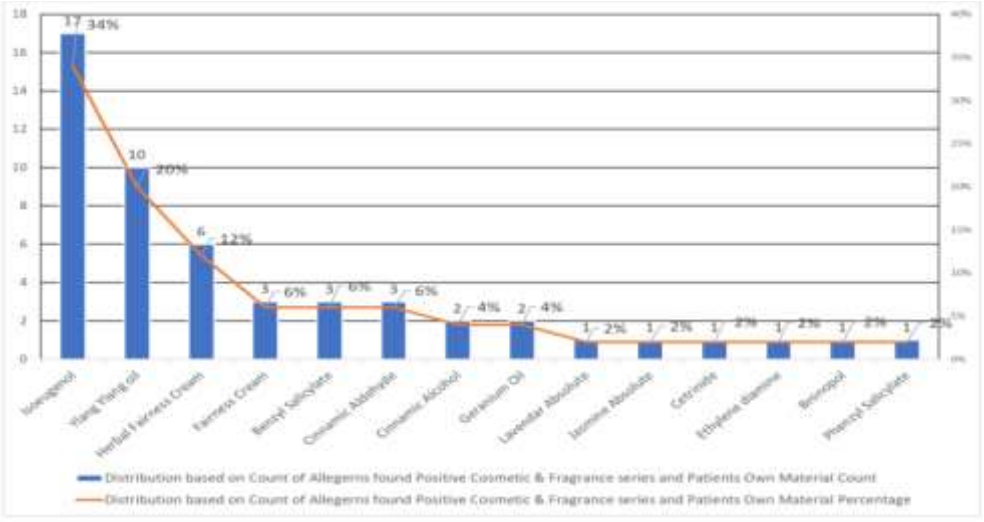
Distribution based on Allergens found to be positive from Indian Standard Series

Allergen	Count	Percentage
Nickel Sulphate	8	16%
Fragrance Mix	7	14%
Hydroquinone	7	14%
Colophony	6	12%
Paraphenylenediamine	6	12%
Potassium dichromate	5	10%
Cobalt Sulphate	3	6%
Thiuram mix	3	6%
Black Rubber mix	2	4%
Balsam of Peru	1	2%
Parabens Mix	1	2%



Distribution based on Allergens found to be positive from Cosmetic and Fragrance Series

Allergen	Count	Percentage
Isoeugenol	17	34%
Ylang Ylang oil	10	20%
Herbal Fairness Cream	6	12%
Fairness Cream	3	6%
Benzyl Salicylate	3	6%
Cinnamic Aldehyde	3	6%
Cinnamic Alcohol	2	4%
Geranium Oil	2	4%
Lavender Absolute	2	4%
Jasmine Absolute	1	2%
Cetrimide	1	2%
Ethylene diamine	1	2%
Bronopol	1	2%
Phenzyl Salicylate	1	2%



- Cases of PCD, EDP, PIH and LPP showed positive reactions to patch tests which shows a positive association between contact hypersensitivity and these conditions.
- Cases of Melasma and PDL showed negative reactions to patch tests which shows a negative association between contact hypersensitivity and these conditions.

CONCLUSION

- In our study patients had diffuse hyperpigmentation of face and neck with history of application of mustard oil ,amla oil, various fairness & cosmetic creams, aromatic oils and fragrances with exposure to environmental and occupational allergens.
- 33 out of 50 patients expressed positive patch test reactions to various allergens of Indian Standard, Cosmetic series and Fragrance series.
- The common allergens found positive were Nickel, Hydroquinone, Fragrance mix 1 and Potassium dichromate & the fragrance ingredients isoeugenol followed by YlangYlang oil.
- Cosmetic creams enhance the appearance of the skin but paradoxically these have led to an epidemic of facial hyperpigmentation therefore strict regulations are needed regarding availability of these products over the counter without compulsory labelling of the constituents. since, in significant number of patients avoidance of such allergens have resulted in clinical improvement.
- Histology still remains the gold standard for diagnosis of conditions, but recently dermoscopy is becoming non-invasive tool for the diagnosis, prognosis and treatment monitoring of various hyperpigmentary conditions.

  Indian standard series and Indian Fragrance & Cosmetic series is approved by CODFI (Contact and Occupational Dermatoses Forum of India) and manufactured/supplied by Creative Diagnostics Medicare Private Limited, Navi Mumbai.

Syringes of Indian Standard Series

Cosmetic and Fragrance Series

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