

Original research article**A study on correlates of facial skin disorders among females**¹CRaghuveer, ²Soumini S, ³Lakshmipathi YPattar, ⁴Kavitha K^{1,3}Associate Professor, Department of DVL, VIMS, Ballari, Karnataka, India²Senior Resident, Department of DVL, Sri Devaraj Urs Medical College, Tamaka, Kolar, Karnataka, India⁴Associate Professor, Department of DVL, SUT Academy of Medical Sciences, Trivandrum, Kerala, India**Corresponding Author:** Kavitha K**Abstract**

Hypermelanoses may result from increased melanin in the epidermis (epidermal hypermelanoses), the dermis (dermal hypermelanoses) or both (mixed hypermelanoses). In dermal hypermelanoses, melanosomes are formed in the epidermis by epidermal melanocytes and are transferred to the dermis, where they are found mostly within macrophages (melanophages). This phenomenon is called “epidermal melanin incontinence”. In each case, a detailed history was elicited, including basic epidemiological data, symptoms, onset, duration and type of lesion, pre-disposing factors like sun exposure, drug intake, topical application of medicines and cosmetics etc., genetic and occupational factors and systemic diseases. In the present study the most common predisposing factor was sun exposure seen in 36 cases (35.29%), cosmetics in 17 cases (16.66%). Family history was present in 8 (7.8%), stress factor, drug history, hypothyroidism and anemia was present in 4(3.92%) cases each. Refractive error was present in 3 cases (2.9%) and 12 patients (11.76%) developed pigmentary disorders during pregnancy.

Keywords: Facial skin disorders, females, correlates**Introduction**

Hypermelanoses are a group of disorders characterized by abnormally darker skin that results from increased melanin production from a normal number of melanocytes.

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In dermal hypermelanoses, melanosomes are formed in the epidermis by epidermal melanocytes and are transferred to the dermis, where they are found mostly within macrophages (melanophages). This phenomenon is called “epidermal melanin incontinence”^[1].

Most facial melanoses are commoner in darker races with both light and photosensitizing chemicals playing an important role.

Periorbital hyperpigmentation, also referred to as idiopathic cutaneous hyperchromia of the orbital region (ICHOR), periorbital melanosis, dark circles or infraorbital pigmentation, is more frequently observed in darker individuals and can be of primary or secondary aetiology. The causes of secondary periorbital hyperpigmentation often has a multifactorial pathogenesis including genetic or constitutional pigmentation, dermal melanocytosis, post inflammatory hyperpigmentation (PIH) secondary to atopic and/or allergic contact dermatitis, periorbital oedema, excessive subcutaneous vascularity and shadowing due to skin laxity and tear trough associated with ageing. Excessive sun exposure, drugs, hormonal causes and extension of pigmentary demarcation lines have also been considered to be contributory. ICHOR is characterized by bilateral darkening of the orbital skin and eyelid, which is not secondary to systemic or local disease^[2, 3].

Melasma is more common in women. Men have been reported to represent 10% of cases and demonstrate the same clinical and histologic characteristics as women.

Melasma is characterized by symmetrical hyperpigmented macules, which may be blotchy, irregular, arcuate, or polycyclic and rarely have a linear or a starburst distribution.

EDP presents as numerous asymptomatic, gradually enlarging and coalescing, persistent macules of variable sizes. Initially having an erythematous hue and an elevated dusky border (not always noted), lesions eventually become pigmented. Initially localised, lesions eventually cover extensive areas of face, trunk, and limbs^[4].

Acne is one of the most common skin disorders worldwide and occurs primarily at puberty with a prevalence of almost 95%.

Acne vulgaris is a multifactorial disorder of the pilosebaceous unit. The clinical picture can vary

significantly, from mild comedonal acne to fulminant systemic disease. Although all age groups may be affected by its many variants, it is primarily a disorder of adolescence.

Acne vulgaris develops earlier in females than in males, which may reflect the earlier onset of puberty in females. The most severe forms of acne vulgaris occur more frequently in males, but the disease tends to be more persistent in females. Severity of the disease varies markedly from one individual to the other depending upon the interplay of various factors involved in the development of acne vulgaris^[5].

The pathophysiology of acne involves a complex interaction of multiple factors, both internal and external to the pilosebaceous apparatus. The role of genetic predisposition in the development of acne is uncertain, but it is known that the number and size of sebaceous glands and their subsequent activity is inherited. Although the composition of sebum is the same in persons with or without acne, those with acne will have variable seborrhea^[6].

Methodology

In each case, a detailed history was elicited, including basic epidemiological data, symptoms, onset, duration and type of lesion, pre-disposing factors like sun exposure, drug intake, topical application of medicines and cosmetics etc., genetic and occupational factors and systemic diseases.

A thorough cutaneous, physical and systemic examination was carried out according to a prestructured proforma taking into account the type of lesion, site and other associated features.

Study source comprised of those seeking the outpatient services at the department of Dermatology, at VIMS, Ballari.

All female patients, who presented with the primary symptoms, suggestive of facial dermatoses, attending the OPD were subjected to detailed history and clinical examination. During the study period, a total of 300 cases were selected randomly after taking their consent. Ethical clearance was obtained before commencing the study.

Inclusion criteria

Female patients aged more than 15 years presenting with facial skin lesions to the dermatology OPD at VIMS BALLARI will be included in the study.

Exclusion criteria

1. Patients younger than 15 years of age.
2. Patients with congenital skin disorders involving face.
3. Patients with sole involvement of mucosa of oral cavity, lips and conjunctiva.
4. Facial lesions due to physical or chemical injury and burns.

Results

Table 1: Associated systemic illness

Facial dermatosis (n=300)	Associated Systemic illness	Percentage(%)
No associated systemic illness	250	
Associated systemic illness	50	
Diabetes Mellitus	20	66.66
Hypertension	11	36.66
Hypothyroidism	7	23.33
Coronary heart disease	2	0.66
Diabetes mellitus + Hypertension	4	1.33
Polycystic ovarian disease	6	2

Among 300 patients 250 had no associated systemic illness and 50 had associated systemic illness. Out of 50 patients 20 (66.66%) had diabetes mellitus, 11 (36.66%) had hypertension, 7 (23.33%) had hypothyroidism, 6 (2%) had Polycystic ovarian disease and 2 (0.66%) had coronary heart disease. Diabetes mellitus with hypertension was present in 4 (1.33%) patients.

Table 2: Age incidence in pigmentary disorders

Age	No. of cases	Percentage (%)
16-25	24	23
26-35	51	50
36-45	19	19
46-55	5	5
56-65	2	2
>65	1	1
	102	100

Maximum cases of pigmentary disorders were seen in the age group of 26-35 years (50%) and least incidence was seen in age group above 65 years (1%).

Table 3:Predisposing factors in pigmentary disorders

Pigmentary disorders (n = 102)		
Predisposing factor	Number	Percentage (%)
Sun exposure	36	35.29
Anemia	04	3.92
Cosmetics	17	16.66
Family history	08	7.8
Refractive errors	03	2.9
Stress	04	3.92
Pregnancy	12	11.76
Drug history	04	3.92
Hypothyroidism	04	3.92

In the present study the most common predisposing factor was sun exposure seen in 36 cases (35.29%), cosmetics in 17 cases (16.66%). Family history was present in 8 (7.8%), stress factor, drug history, hypothyroidism and anemia was present in 4(3.92%) cases each. Refractive error was present in 3 cases (2.9%) and 12 patients (11.76%) developed pigmentary disorders during pregnancy.

Table 4: Aggravating factors for Melasma

Melasma (n=66)		
Aggravating factor	Number	Percentage
Sun exposure	25	37.87
Cosmetics	16	24.24
Family history	07	10.60
Hypothyroidism	04	06.06
Pregnancy	12	18.18
Drug history	02	03.03
Total	66	100

The most important aggravating factor was found to be sun exposure seen in 25 (37.87%) patients. A family history of melasma was present in 7 patients (10.60%). Among 66 patients, 12 (18.18%) developed melasma during pregnancy. A history of drug intake was found in 2 (3%) patients among them, 1 was on OCP, 1 patients was on MB-MDT. Other predisposing factors were probably the use of cosmetics like fairness creams 16(24.24%) and associated systemic disease like hypothyroidism reported in 4 cases (6.06%).

Table 5: Aggravating factors for Periorbital melasmosis

Periorbital melasmosis (n=12)		
Predisposing factor	Number	Percentage (%)
Anemia	04	33.33
Stress and sleep deprivation	04	33.33
Refractive errors	03	25
Family history	01	8.33

In the present study, 12 of 92 patients with facial pigmentary disorders were of periorbital melasmosis. Anaemia (33.33%) and stress and sleep deprivation (33.33%) were the most common aggravating factors. Refractory errors were present in three patients (25%) and family history was present in 1 patient (8.33%).

Table 6: Predisposing factors of Acne vulgaris

Acne vulgaris (n=63)		
Aggravating factor	Number	Percentage (%)
Cosmetics	40	63.49
Premenstrual flare	15	23.8
Stress	30	47.61
Polycystic ovarian disease	6	9.5
Summer season	15	23.8
High glycemic diet	39	61.9
Steroids	20	31.74

Among 63 patients of acne, 40 patients (63.49%) were using cosmetics, 39 (61.9%) cases reported consumption of a high glycemic diet. Thirty (47.61%) cases had stress, 20 (31.74%) reported steroid application and 15 patients each reported premenstrual flare and aggravation in summer season. Six patients were diagnosed as polycystic ovarian disease.

Discussion

Out of 63 patients of acne vulgaris, maximum number of patients 49 (77.77%) belonged to the age group of 16 to 25 years, followed by 26-35 years with 14 (22.22%) cases. Thiobutolet *et al.*^[7] reported more number of patients were found to have acne during the middle to late teenage period which is comparable in our study. In the present study 63.49% were using cosmetics and believed cosmetics aggravate acne. This is in concordance with Tan *et al.*^[8] in their study reported that 46% of patients believed cosmetics to be an aggravating factor.

In the present study 47.61% patients had aggravation of acne due to stress. This is in concordance with the observations made by Green and Sinclair^[9], who reported that 67% students believed that stress played a role in acne exacerbation.

In the present study, 61.9% patients reported consumption of high glycemic diet like chocolates, ice cream and fried food. In the study by Smith *et al.*^[10] and Cordianet *et al.*^[11], there was positive association between a high glycemic diet and acne severity.

Premenstrual flare is well recognized in acne vulgaris, observed in 23.8% patients in the present study. The pilosebaceous duct become smaller between 15 to 20 days of menstrual cycle and the ensuing blockage leads to premenstrual acne.

Adityanet *et al.*^[12] reported 57.7% prevalence while Stoll *et al.* found 44% prevalence of premenstrual flare. The incidence of premenstrual flare was lower compared to that of earlier studies probably due to a small sample size.

In a study conducted by Adityanet *et al.*^[12], aggravation in summer season was observed by 23% of patients while in the present study, 23.8% patients reported exacerbation in summer.

Out of 63 patients of acne, grade II acne was the most prevalent type seen in 34 patients (53.96%) followed by grade I in 14 patients (22.22%) and grade III in 11 patients (17.46%). This observation is in concordance with Biswas S *et al.*^[13], who reported grade II (45%) as the most prevalent type. However, Adityanet *et al.*^[12] in his study reported grade I (60%) as the most common type.

In our study adult onset acne was seen in 3 (4.05%) cases and the mean age of the patients was 41.33 years with a range of 35-50 years which is similar to a study done by Khunger N *et al.*^[14].

In our study 03 patients (4.05%) had perioral dermatitis. Majority of the patients were in 3rd decade. This is similar to the review by Tempark T *et al.*^[15] where the author has observed that majority of patients are affected in 2nd to 4th decade.

In our study, 3 patients presented with rosacea, 2 patients were in 4th decade of life and 1 patient in 3rd decade. Two (66.6%) patients had erythematotelangiectatic type of rosacea and 1 patient had papulopustular type (33.3%) which was almost similar to study done by Cheong KW *et al.*^[16] (ETR 56.3%, PPR 37%). All patients gave history of exacerbation following sun exposure and 2 patients reported exacerbation on intake of hot beverages.

In our study 2 patients had acneiform eruptions over the face following application of topical steroids.

Conclusion

- Among pigmentary disorders, the most common age group was 26-35 years (50%).
- Predisposing factors of pigmentary disorders were sun exposure (35.29%), cosmetics (16.66%), pregnancy (11.76%), family history (7.8%), stress (3.92%), hypothyroidism (3.92%), anemia (3.92%), drug intake (3.92%), refractive errors (2.9%).

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