



Hyperpigmentary Disorders in a Tertiary Care Center of Pondicherry: A Cross Sectional Study

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Abstract

Introduction:

Hyperpigmentary disorders are one among the common and escalating issues of cosmetic concern globally, regardless of age. Change in lifestyle, use of different cosmetic products, drugs and light sources can be a reason for this. They possess a great impact and emotional stress to the sufferers.

Aims:

To estimate the prevalence of hyperpigmentary skin disorders.

Methods:

This was a descriptive, observational, hospital based study. The patients presenting with skin hyperpigmentary disorders between October 2020 to December 2020 were studied, the diagnosis made and percentage calculated. The diseases were classified into one of the etiological groups.

Results:

A female preponderance was observed in this study comprising 56.97% and males 43.03%. Out of the 165 patients studied, post inflammatory hyperpigmentation (PIH) was the commonest cause of skin hyperpigmentation as observed in 81(49.09%) patients followed by melasma in 21(12.72%) patients, pigmentary seborrheic keratosis in 15(9.09%) patients and acanthosis nigricans in 7(4.24%) patients. Among PIH, acne was the leading cause.

Limitations :

This study was limited only to 165 patients who visited the outpatient department within the study duration complaining about their hyperpigmentation. A larger sample size would have helped us to study more causes of hyperpigmentation and probably the rarer ones.

Conclusion:

Skin hyperpigmentation results from a variety of causes. Post inflammatory hyperpigmentation was the foremost as analyzed in this study. Melasma, acanthosis nigricans, seborrheic keratosis, eczema , trauma, pityriasis versicolor and freckles also stand back to back producing hyperpigmentation.

Keywords: Post inflammatory hyperpigmentation, melasma, acne, melanin, seborrheic keratosis

Introduction

Hyperpigmentary disorders are one among the common and escalating issues of cosmetic concern

globally, regardless of age. Change in lifestyle, use of different cosmetic products , drugs and light sources can be a reason for this. They possess a great impact

and emotional stress to the sufferers. This study on the common pigmentary disorders helps dermatologists to do health planning and thereby advise the patients on further prevention and treatment of the same. Pigmentary disorders usually occur in the skin of color. Skin color is determined by melanin and degree of melanisation. Melanin, the color pigment is synthesized in the melanosomes within the melanocytes of skin. ^[1]

Pathologies either in melanocytes or in the melanisation process end up in the pigmentary disorders. Hyperpigmentation can be due to various factors like increase in the epidermal or dermal melanin, thickened or blood in stratum corneum, or pigmentary dermal deposits. ^[2] Common hyperpigmentary causes in children are Mongolian spots, cafe- au- lait macules, post inflammatory hyperpigmentation (PIH), congenital melanocytic nevi and lichen planus ^[3] whereas that in adults are melasma, post inflammatory hyperpigmentation, Riehl's melanosis, idiopathic guttate and confluent hypermelanosis, lichen amyloidosis and lichen planus. ^[4]

Materials and Methods:

This was a hospital based observational, cross sectional study carried out in the outpatient department of dermatology from 1st October 2020 to 31st December 2020 among those who complained about their skin hyperpigmentation. This study included only those who gave consent for the study and excluded the patients having pigmentation but not complaining about them.

Results:

A total of 165 patients were included in this study. Out of the total 415 patients who visited our

department within this study duration, there were 39.75% patients worried with their hyperpigmentation. Females outnumbered males comprising 94 (56.97%) and 71 patients (43.03%). The age of the patients ranged from 1 year to 70 years. Majority belonged to the age group 31- 40 years and the least with 5 patients each from less than 10 years and more than 61 years.

PIH was the leading cause for pigmentation observed in 81 (49.09%) cases of them. This was followed by melasma in 21 (12.72%) patients, pigmentary seborrheic keratosis in 15 (9.09%) patients and acanthosis nigricans in 7 (4.24%) patients. Eczema, trauma, pityriasis versicolor were seen five cases (3.03%) each with 4 cases (2.42%) of freckles. 3 (1.81%) patients each, presented with acquired melanocytic nevi (AMN), seborrheic melanosis and periorbital melanosis. Pregnancy related pigmentation, exogenous ochronosis, fixed drug eruption and urticaria were seen in 2 (1.21%) patients each. 1 (0.60%) case each from nevus spilus, Becker's nevus, macular amyloidosis, erythema dyschromicum perstans and pigmentary eccrine hidrocystoma was seen.

Table 1 shows etiological categorization of the observed hyperpigmentary disorders.

Among PIH, acne was the commonest cause, observed in 26 patients, out of which 17 were females and 9 males. 24 of them were less than 30 years. All the 21 cases of melasma were noticed in females with age ranging from 22 to 54 years. Graph 1 reveals the prevalence of hyperpigmentary disorders. Figure 1 and 2 shows images of macular amyloidosis and lichen planus.

Table 1 : Etiological group- wise categorization of Hyperpigmentary disorders

Serial number	Etiological group	Number	Percentage	Disease	Number
1.	Physiological	2	1.21%	Pregnancy related pigmentation	2
2.	Developmental	5	3.03%	Nevus spilus Becker's nevus Acquired melanocytic nevus	1 1 3
3.	Genetic	4	2.42%	Freckles	4
4.	Physical	5	3.03%	Trauma	5
5.	Metabolic	8	4.84%	Macular amyloidosis Acanthosis nigricans	1 7
6.	Endocrine	21	12.72%	Melasma	21
7.	Drugs and chemical agents	2	1.21%	Fixed drug eruptions	2
8.	Inflammation	6	3.63%	Erythema dyschromicum perstans Eczema	1 5
9.	Infective	5	3.03%	Pityriasis versicolor	5
10.	Neoplastic	16	9.69%	Pigmentary apocrine hydrocystoma Pigmentary seborrheic keratosis	1 15
11.	Post inflammatory	81	49.09%	Eczema Acne Post infections Impetigo Lichen planus Psoriasis Insect bites Bullous pemphigoid	9 26 25 7 5 4 4 1
12.	Miscellaneous	10	6.06%	Seborrheic melanosis Peri- orbital melanosis Exogenous ochronosis	3 3 2

				Urticaria pigmentation	2
	Total	165	99.96%		

Graph 1 : prevalence of hyperpigmentary disorders

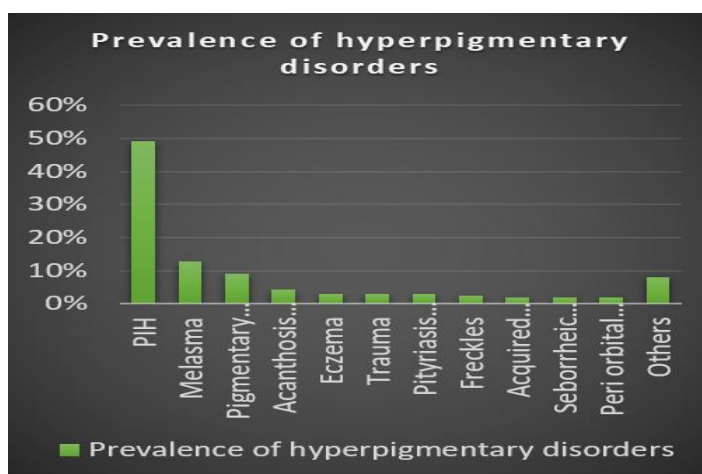


Figure 1 : Macular amyloidosis



Figure 2: Lichen planus



Discussion:

Indian skin color exhibits a wide variation. Their complexion ranges from whitish to brown. Skin pigmentary disorders are common in them. Skin pigmentary disorders creates major dermatological concerns among the population.

PIH was the leading cause of hyperpigmentation in our study whereas melasma was the commonest cause of hyperpigmentation observed in 33.63% patients followed by post inflammatory hyperpigmentation in 12.52% patients, acquired melanocytic nevi in 7.48% patients, lichen planus pigmentosus in 7.37% patients and ephelids in 6.89% patients.^[6]

The difference in the locality, and socioeconomic status may be the reason for the difference seen between Adil et al and our study.

PIH is a pigmentary skin disorder that develops over time.^[7] It is caused by an inflammatory reaction triggered by cutaneous diseases such as acne vulgaris, atopic dermatitis, psoriasis, impetigo, lichen planus, pityriasis rosea, irritant and allergic contact, photocontact-dermatitis, and insect bites, as well as a laser therapy complication. It has been demonstrated that the severity and frequency of PIH are both increased in people of colour of both genders.^[8]

Pigmentary seborrheic keratosis was in 9.09% in our study that appears as brown to blackish papules and plaques with a stuck on appearance mostly over the

face and neck. Of them, DPN (dermatosis papulosa nigra) was the mostly observed 66% followed by classic seborrheic keratosis 34%.

Acanthosis nigricans, a marker of insulin resistance^[9] was observed in 4.24% while it accounted for 3.55% in Adil et al study.^[6]

Hyperpigmented variety of pityriasis versicolor due to increased size of melanosomes constituted 3.03% as similar to hyperpigmentation due to eczema and trauma.

Freckles were noticed in 2.42% of our cases, while it was 3.5% in a study from Kashmir.^[10]

1.81% each of acquired melanocytic nevi, seborrheic melanosis and periorbital melanosis were seen in our study. AMN was seen in 7.48% in another study.^[6]

Fixed drug eruption constitutes the most common adverse skin reactions seen in India^[11] which holds true in this study. Among the drugs and chemical category, all the two cases belonged to fixed drug eruptions(1.21%).

Conclusion:

Skin hyperpigmentation can result from several causes. PIH is the leading cause of hyperpigmentary disorders with acne the main culprit mostly affecting younger adults. The acquired endocrine disorder melasma, with bilateral blotchy facial pigmentation seems to be one among the emerging donors for pigmentary skin disease, dominating in females.

Pigmentary seborrheic keratosis, that comes under the tumor variety and acanthosis nigricans, the metabolic variant with velvety plaques occupy the next seats.

Other common causes of hyperpigmentation are eczema, trauma, pityriasis versicolor and freckles. Nevi, exogenous ochronosis and macular amyloidosis also line up back to back creating cosmetic concerns among the patients. Ultraviolet radiation is known to cause or worsen pigmentation disorders. Dermatologists have adopted photoprotection prevention strategies as well as treatment modalities such as topical and other medical approaches to alleviate these disorders. Knowledge regarding the current pigmentary disorders help the dermatologists to effectively do the health planning and to advise the patients on prevention and treatment.

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