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Precipitating Factors of Psoriasis in North Indian Population

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Aim: This study aims to study precipitating factors of psoriasis in the north Indian population. **Material & Method:** Two hundred twenty-eight psoriasis patients regardless of age, sex, religion, occupation, attending the skin, and V.D. outpatients Department, B.R.D. Medical College, Gorakhpur for were taken because of the subject of this study. The bulk of patients belonged to the Eastern U.P. and adjoining areas of Bihar and Nepal. The clinical criteria for diagnosis of psoriasis were the presence of Erythematous and papulosquamous lesions with loosely adherent silvery-white scales. The auspitz's sign was demonstrated all told the cases. The detailed clinical history and examination were recorded. Each patient was categorized into mild to severe psoriasis. **Result:** The maximum percentage of cases was aggravated by weather (winter), 55.26%, next to that was trauma 27.1 9%, and least after infections 4.35%. The summer and spring seasons showed an improved effect on the condition of psoriasis. Alcohol, smoking, and mental stress found no relation with psoriasis. In most cases, where the infection was associated with the disease, it had been aggravated only in children, and young adults and lesions were of guttate type. Pregnancy had no effect in 25.43% of cases, while the disease was improved in 3.50% of patients and worsen in 4.35% of cases. **Conclusion:** Psoriasis is positively correlated with the winter season and negatively associated with Summer and Spring.

Keywords: Psoriasis, Precipitating factors, Psoriasis plaque, Psoriasis-Arthritis

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Introduction

Psoriasis is a common, genetically determined chronic, relapsing, inflammatory disorder of the skin characterized by red, scaly, sharply demarcated plaques that typically exhibit silvery-white scales. Psoriasis is one of the significant common chronic inflammatory diseases of the skin, affecting 2–3% of the population [1]. Up to now, there's no cure known for this disease, which is related to the extensive psychological and physical burden. This disease evolves overtime in an exceedingly complex interplay of heterogeneous genetic and environmental factors [2]. Psoriasis isn't only a skin problem but may additionally include inflammation of the joints in psoriasis arthritis [3] and comorbidities like metabolic syndrome with increased insulin resistance, increased cardiovascular risk [4,5]. Several risk factors and pathways are known to enable the event of psoriasis. Genetic factors seem to possess a task when interacting with environmental factors like drugs, stress, or streptococcal infection [6]. Almost all styles of trauma are known to be related to plaque psoriasis.

Additionally, excessive scratching can trigger or aggravate localized psoriasis. The event of psoriatic plaques at any site of trauma is thought of because of the koebner reaction. The emergence of the latest psoriatic lesions within the non-involved (healthy) skin region following an injury/trauma to the healthy skin areas of psoriatic patients [7]. Sunlight is understood to be beneficial for patients with plaque psoriasis; however, during a small number of patients, the disorder could also be aggravated by light. Clinical improvement of psoriasis following sun exposure is preceded by a rapid reduction in local and systemic inflammatory markers, strongly suggesting that immune modulation mediated the observed clinical effect [8]. It was recently reported that tonsils from patients with psoriasis are more frequently infected with β-haemolytic streptococci, especially group C streptococci, than recurrently infected tonsils from patients without psoriasis [9]. Nevertheless, the immunological basis for the association of psoriasis and streptococcal throat infections continues to be under investigation.

Material and Methods

This study was conducted at the O.P.D. of the Department of the skin and V. D. B.R.D. Medical College, Gorakhpur. The total duration of the study was 16 months, and this study was a Cohort study (prospective and observational). A systematic sampling method was followed for sample collections; the bulk of patients belonged to the Eastern U.P. and adjoining areas of Bihar and Nepal. The sample size was calculated using the online software available at www. clinical.com; a total of two hundred twenty-eight psoriasis cases were identified for study. Inclusion criteria for study followed: Psoriasis regardless of age, sex, religion, occupation, medical conditions. Exclusion criteria for the study: Psoriasis cases from Geographically other than North India, Unable to follow up, and any other dermatological disorder associated. The clinical criteria for diagnosis of psoriasis were the presence of Erythematous and papulosquamous lesions with loosely adherent silvery-white scales.

Psoriatic arthritis with asymmetrical distal interphalangeal joint involvement

Psoriatic arthritis of left grate toe with nail involvement

The auspitz's sign was demonstrated all told the cases [10]. The patients in whom joint involvement the diagnosis was made based totally on history, physical examination, the same old absence of R.F. (Rheumatoid factor), and radiological features. The physical examination excludes assessment of number, location, as distribution of joints involved, together with the presence of psoriatic skin lesion, key signs and symptoms indicative of rheumatism include asymmetrical joint involvement, Enthesitis,

Dactylitis, distal inter phalange (D.I.P.), and proximal inter phalange (P.I.P.) involvement and spinal inflammation.

The detailed clinical history and examination were recorded. Each patient was categorized into mild to severe psoriasis.

Each patient has undergone the following investigation.

01. Routine blood tests
02. Liver function test, kidney function test (if required)
03. Skin biopsy
04. Tests for Rheumatoid factor and serum uric acid.
05. Radiographs of both hands and feet.
06. Radiographs of the lumbosacral spine and both sacroiliac joints.
07. Radiographs of affected joints (if any).

Psoriasis (plaque type)

Observation

This study was conducted on 228 patients with psoriasis attending the Dermatology outpatient department of Nehru Hospital, B.R.D. Medical College, Gorakhpur, from July 2005 to October 2006.

Table 1: Age and Sex Distribution of the subjects

Age (Years)	Male		Female		Total	
	No	%	No	%	No	%
0-10	06	02.63	06	02.63	12	05.26
11-20	18	07.89	28	12.28	46	20.16
21-30	36	15.78	24	10.52	60	26.31
31-40	34	14.51	18	07.89	52	22.80
41-50	20	08.77	12	05.26	32	14.03
51-60	16	07.01	02	00.87	18	07.89
61-70	06	04.35			06	04.35
71-80	02	00.87			02	00.87
Total	138	100.0	90	100.0	228	100.0

The total numbers of cases studied were 228, of which males were 138 and females were 90. the maximum numbers of patients were within the cohort of two 1-30 years. In males, most cases were within 21-30 years, while in females, 11 -20years.

Table 2: Precipitating Factors

Factors	Aggravated		Improved		No Effect	
	No	%	No	%	No	%
Throat infection	10	04.35	-	-	218	95.61
Mental stress	16	07.01	-	-	212	92.98
Trauma	62	27.19	-	-	166	72.80
Alcohol/Smoking	10	04.35	-	-	218	95.61
Pregnancy	10	04.35	08	03.50	58	25.43
Sunlight	30	14.03	48	21.50	148	64.90
Dialysis	-	-	-	-	-	-
Weather						
- Summer	44	19.29	110	43.86	74	32.45
- Winter	126	55.26	36	15.78	66	28.94
- Spring	50	21.92	98	42.98	80	35.08

The maximum percentage of cases was aggravated by weather (winter), 55.26%, next to that was trauma 27.1 9%, and least after infections 4.35%. The summer and spring seasons showed an improved effect on the condition of psoriasis. Alcohol, smoking, and mental stress found no relation with psoriasis. In most cases, where the infection was associated with the disease, it had been aggravated only in children, and young adults and lesions were of guttate type. Pregnancy had no effect in 25.43% of cases, while the disease was improved in 3.50% of patients and worsen in 4.35% of cases.

Discussion

Our study indicated that 55.26% of patients with psoriasis had aggravation of disease conditions in fall/winter. The seasonality peaking of psoriasis has been observed in clinical practice, verified by the numerous seasonal variation in dermatologic office visits [11]. Observational investigations, supported Google Trends datasets, showed that the general public interest in seeking psoriasis-related information displayed a seasonal trend.

The very best interest appeared in late winter and early spring [12]. The trend of online researches also implied the association between the psoriasis flare and, therefore, the weather. Our study shows that in summer, psoriasis condition improves in 43.8 6% where is aggravated in 19.2 9% and remain affected in 32.45%. Psoriasis in winter aggravated in 55.2 6%, improved in 15.7 8% and had no effect in 28.94 %. In spring, it gets aggravated in 21.9 to twenty-eight improve in 42.9 8% and no effect in 35%. In presence of sunlight improved in 21.5 0% aggravated in 14.0 3% and remain unaffected in 64.9 0%. Heinrich Koebner (1838–1904) reported the emergence of the latest psoriatic lesions within the non-involved (healthy) skin region following an injury/trauma to the healthy skin areas of psoriatic patients [7].

Still, within the present study, most of the patients were household workers and farmers. Thanks to the character of their profession, minor trauma might well be ignored, which could are related to the disease. Patients with psoriasis were 4-5 times more likely to be colonized by Staphylococcus aureus (S. aureus) on the skin and 60% more likely to be colonized within the cavity compared with healthy controls [relative risk and 95% confidence interval (CI), skin: 5.54 (3.21-9.57); nares: 1.60 (1.11-2.32)] [13]. In our study, 4.35 percent of patients with psoriasis reported pharyngitis, and during this, children and young adults below 20 years were more affected. Smoking [14-18]. And metabolic syndrome [18,19] are recognized as risk factors for severe psoriasis, but our study shows alcohol smoking, and mental stress found no relation with psoriasis.

Pregnancy in women with psoriasis represents a high-risk situation thanks to the limited therapeutic options and multiple comorbidities [20,21]. Moderate-to-severe psoriasis is associated during pregnancy with pregnancy-induced hypertensive disorders, low birth weight (L.B.W.) for age, preterm birth (PTB), depressive disorders, and gestational diabetes [21]. Even abortion [22-24] during this study, we found that 4.35 percent of pregnant women with psoriatic cases found it aggravated; in 3.5% cases, the condition improved, whereas 25.4 3% cases remain unaffected with pregnancy.

Conclusion

Psoriasis is aggravated during winter, but in summer and spring condition improves. At the same time, alcohol and smoking found no effect on psoriasis. Psoriasis correlation with sunlight, pregnancy and trauma need more study. The impact of psoriasis on the physical, mental, social and financial aspects of life should not be underplayed and considered as necessary as other chronic conditions. Advancement in the cellular immunology and biology of psoriasis will improve this research.

The outcome of this study

In the North Indian population, psoriasis condition improves in summer to 43.8 6% and aggravated to 55.2 6% in winter.

Disclosure: The authors declare that there is no conflict of interest.

Author Contribution

K.B.: Data collection, Methodology, **R.S.:** a review of literature, **K.C.:** statistical analysis, data interpretation, **B.:** statistical analysis, data interpretation, **AM:** final approval, Review of the literature.

What does this study add to existing knowledge?

The impact of psoriasis on the physical, mental, social and financial aspects of life should not be underplayed and must be considered with the same importance as other chronic conditions.

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