



# Psoriasis: A brief clinical study

The skin, like eyes, is the mirror of mind. The term Psoriasis comes from the Greek word meaning; "to itch," and was first used by Galen, who described a scaly itchy rash on the eyelids and genitalia which was probably not Psoriasis as we know it today, but eczema. Description of a skin disorder compatible with Psoriasis is present in the Old Testament. It is one of the oldest of all recorded skin diseases. Celsus probably described it originally in 35 to 40 AD. Interestingly, it appears that Psoriasis was grouped with leprosy by the Greeks and subsequently, until the nineteenth century, this grouping led to Psoriatics being burnt at stake in the fourteenth century. It was not until the first half of the nineteenth century that Psoriasis was described as a separate and definite clinical entity.

Psoriasis is a common, scaly, thickened, erythematous disease of unknown etiology showing wide variation in severity and in distribution of skin lesions. It is a non-communicable and non-infectious disorder.

It's prevalence varies from 1-4% of the population and 3-4% of all skin diseases. Usually less severe in Summer than in Winter, but its onset in Summer months is strikingly high. Earliest reported case is at the age of 4th month and latest 79 years.

**Aetiology:** It is a Psoro-sycotic disorder. The exact cause is not known. Both polygenic and environmental factors play a role.

1) May first appear at sites of local injury, scars or vaccination as part of Koebner's phenomena. It has capacity to produce skin lesions at the site of local injury. Or an injury might cause disappearance of existing lesion as both can't exist together.

- 2) Fungal or Bacterial infections especially with Haemolytic Streptococci influence the production of guttate form of Psoriasis.
- 3) Pregnancy may ameliorate Psoriasis due to increased corticosteroid secretion.
- 4) Emotional stress is often the culprit, for example, commencement of school, puberty etc.
- 5) The acute fevers, especially exanthemata, may cause it to disappear, only for it to return again with the restoration of normal health. On the other hand, scrofula, gout, and lactation tend to aggravate the disease.
- 6) Some drugs and chemicals like Lithium, anti-malarial, beta-blocking agents, non-steroidal anti-inflammatory drugs, aspirin and alcohol may either precipitate or exacerbate the condition. Iodide, Progesterone, Salicylates and Nystatin hypersensitivity was recorded for generalized pustular Psoriasis.
- 7) Changes in climate, excessive sunlight aggravates the complaint. An important recent development is severe, recalcitrant Psoriasis in patients with acquired immune deficiency syndrome.

**Pathogenesis:** Accelerated proliferation of keratinocytes and disturbed epidermal maturation are primary alterations of Psoriasis. Spontaneous exacerbation, remission and predictions of lesions to certain sites are common.

**Biochemical:** There are certain biochemical alterations like increased DNA replication, altered cyclic nucleotide levels, abnormalities in prostaglandins and their precursors, and altered carbohydrate metabolism. Decreased levels of CAMP and increased levels of CGMP promote the epidermal proliferation.

Pronounced uric acid diathesis is present in 50% of cases of long standing, inveterate cases.

Iron content in normal stratum corneum has been determined to be 26 m/g and the normal loss of stratum corneum per day approaches 1 g. Normal iron loss via all body surfaces has been determined to approach 1 mg/day. Thus, iron loss from normal desquamation is



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insignificant. In Psoriasis, the stratum corneum loss can approach 50 g. The mean content of the shed stratum corneum of involved sites in Psoriatic subjects is two times normal. These calculations suggest that up to 1/2 mg of iron can be lost per day via desquamation.

Hypoalbuminaemia has been noted in patients with severe Psoriasis.

**Epidermal:** The cardinal pathophysiology is increase in epidermal proliferation. Psoriatic epidermis turns over 12 times faster than normal skin and there is two fold increase in uninvolved skin.

Polymorphonuclear leucocytes migrate into the epidermis and the focal accumulation in the stratum corneum, known as 'Munro micro abscesses' is a consistent histologic finding.

In Psoriasis the replacement of epidermis i.e., from basal cell to fully keratinised horny cell takes only 3 to 4 days unlike 27 days in normal course. As a result of this the horny layer is immature and parakeratotic, with nuclear fragments still present in the horn cell. It is this parakeratosis which is responsible for the silvery scaling and also the presence of air between the cells forming the scales, so characteristic of Psoriasis.

There are 5 classical histological changes of chronic Psoriasis (1) Parakeratosis with absence of stratum, (2) Small collection of polymorphonuclear leucocytes (Munro micro abscesses), (3) Thinning of the epidermis overlying the dermal papillae, (4) Acanthosis of the rete ridges of the epidermis, (5) Dilatation and tortuosity of the dermal capillary loops.

**Immunological:** There is increased level of IgA and decreased level of IgG in Psoriatic patients.

There are mainly 5 defects of cell-mediated immunity in Psoriasis viz -

- 1) Depressed response to contact allergen
- 2) Decreased delayed response to intra-dermal challenge with antigen.
- 3) Depressed response to mitogens
- 4) Impaired r-IFN production on Con-A stimulation
- 5) Normal and decreased numbers of T-lymphocytes.

**Vascular:** If we now concentrate on some of the vascular abnormalities, they indicate the active role in the pathogenesis of Psoriasis. The dermal capillary loops of both involved and uninvolved skin of Psoriatic patients are dilated, elongated, coiled, and abnormally

tortuous. Neutrophils and enzymes may be squirted into the epidermis from these distorted vessels. Arterial capillaries are more involved than veins. Skin changes are preceded by capillary alteration.

Hairs on the plaques are thinner than those elsewhere on the Psoriatic patient or on normal subjects. There is also an absence of sweating in the plaques.

**Sites:** The lesions have certain predilection for extensor surfaces viz. elbows, knees, scalp and lumbosacral skin, all with a tendency to fairly regular trauma.

**Skin Lesions:** This disease first starts as papular eruption, dry and scaly. The lesions are first small but increase in size rapidly, forming large plaques. But all the lesions have three cardinal features in varying degree of intensity — **erythema, scaling, and thickening.** The eruptions tend to be symmetrical in nature. A sharp, defined border with a bright red colour and silvery white scale delineate the lesions of Psoriasis. Interestingly the skin immediately surrounding the Psoriatic patch may appear so much paler than normal and apparently less reactive. The bright red colour, which on dependent areas may have a violet colour is indicative of the dilated superficial vasculature. These capillaries so closely approach the skin surface at the apex of the elongated dermal papillae that the removal of the Psoriatic scales frequently produces fine bleeding points—'AUSPITZ SIGN'.

**Nails:** Affected in 30% cases (more affected finger Nails):- The lesions on the nails begin with a brownish horny thickening under the outer margins or free border of the nails; and the horny, thickening then appears under the nails as a yellow plaque.

Based on character of the lesions, Psoriasis can be classified into several clinical forms.

- 1) *Psoriasis punctata*—Without prodromal signs, pin-head sized reddish flat papules which in a few hours become capped with a whitish scale.
- 2) *Psoriasis guttata*—Spots enlarge peripherally, look like drops of mortar with thickened scales. Abrupt appearance. Common in children and young adults, commonly occurs after Streptococcal infection.
- 3) *Psoriasis nummularis or Plaque psoriasis*—The patches are of familiar coins size, with thick plaques.



- 4) *Psoriasis annulata*—2 or 3 patches coalesce, in the centre. There may be resolution leaving a ring like patch.
- 5) *Psoriasis gyrata*—If 2 or more join, as the points of contact melt away leaving one or two lines.
- 6) *Psoriasis diffusa*—Wide extent of surface is involved. If it affects the whole surface it may be called "Psoriasis Universalis" or "Erythro dermic Psoriasis".
- 7) *Psoriasis inveterata*—Induration of the skin, fissures may develop, and adherent scales form.
- 8) *Psoriasis rupioides or Psoriasis Ostreacea*—Tendency to heaping of scales.
- 9) *Psoriasis Verrucosa*—There is papillary hypertrophy.
- 10) *Pustular Psoriasis*—localized where in palms and soles are involved or generalized which is rare and at times fatal. Pustular Psoriasis is precipitated by systemic steroids, iodide, salicylates, progesterone, penicillin and nystatin. Pustules, may be even hemorrhagic.
- 11) *Palmoplantar Psoriasis*—affecting the palms and soles. It differs from classic Psoriasis by the variability of erythema, the loss of sharply marginated plaques and the replacement of the characteristic silvery scales by thickened hyperkeratosis.
- 12) *Flexural psoriasis*—affects the flexures like axillae and groins, in which scales are absent and it is a stubborn type.

Joints are affected in 6-7% cases without spinal involvement and the arthritis is of sero negative type.

It has been found that 85% of patients with arthropathy had nail involvement. Ankylosing spondylitis and inflammatory bowel disease have an increased incidence in patients with Psoriatic arthritis.

**Clinical Features:** Majority of Psoriasis patients have very few physical symptoms. A small proportion of patients, approximately 5-10% will complain of irritation and only in a minority the irritation becomes severe itch. Psoriasis will cause pain if the skin splits and fissures develop. Patients often complain bitterly of the excessive scaling of the skin. There may be severe dandruff. This may be a severe problem when the hands are involved. In erythrodermic Psoriasis patients lose a great deal of heat because of the increased blood flow through the skin and feel shivering. Fever, malaise, leucocytosis, and arthralgia occur

with generalized pustular Psoriasis.

The two psychological disorders which are increased in Psoriasis are depression and obsessional states.

**Investigations:** Laboratory investigations not always confirmative, yet help in some cases. ESR is raised, C-reactive protein and macroglobulins are increased; IgA and IgA immune complexes are raised. Biopsy of the skin would reveal the characteristic findings.

X-ray is positive in Psoriatic arthropathy patients. There may be "Pencil in cup" changes, osteolysis, ankylosis, gross destruction of isolated small joints "Fluffy" periosteitis.

**Prognosis:** Later the onset, better the prognosis'. It also depends on the extent of disease and appearance of new lesions. Plaque and erythrodermic types of Psoriasis have poor prognosis. Whereas Guttate Psoriasis usually has a good prognosis. Risk of death is increased in generalized pustular Psoriasis.

**Complications:** May be Infections, Hypothermia, Hyperthermia, Oedema, Cardiovascular (High output cardiac failure), Anaemia, Hypo-Albuminaemia, Hair loss, Liver disorders (Fatty change and jaundice) and Renal disorders (Acute renal tubular necrosis).

**Differential diagnosis:** Eczema, Lichen Simplex, Lichen Planus, Ptyriasis, Drug Eruptions, Fungal infections, Secondary Syphilis and Superficial Basal Cell Carcinoma have to be differentiated in skin and nail lesions.

**Management:** It is important to explore the anxieties of patients relating to the disease, the therapeutic options, and their expectations of treatment. Psoriasis is not a static disease; seasonal fluctuations, spontaneous remissions. Physical and emotional well being all affect the disease and hence its management. To relieve the emotional stress vacations would help.

The patients should be advised not to 'pick' their lesions, thus minimising Koebnerisation. The patients would be much benefited by exposure to (minimum) sunlight due to the ultraviolet component. Bathing with luke warm or cold water and ordinary soap would remove scales. A balanced diet with increased vegetable intake, helps in the management. ◉