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Psoriasis Disease

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Content

Abstract.....	4
Introduction.....	5
Incidence and prevalence.....	7
Risk factor.....	9
Skin and nails.....	10
Psoriatic arthritis.....	12
Associated diseases.....	13
Psychological and mental health.....	14
Influences from the workplace.....	15
Social participation.....	15
Principles of psoriasis management.....	16
Treating the skin manifestations.....	17
Reference.....	18

Abstract

Psoriasis is a skin condition that causes flaky patches of skin which form scales. On brown, black and white skin the patches can look pink or red, and the scales white or silvery. On brown and black skin the patches can also look purple or dark brown, and the scales may look grey , Numerous studies have reported the coexistence of psoriasis and other serious systemic diseases, most often mentioned are cardiovascular diseases, metabolic syndrome, including hypertension, dyslipidemia and diabetes mellitus, and Crohn's disease , psoriasis can be associated with an inflammatory arthritis known as psoriatic arthritis, which involves the joints of the spine and other joints. This occurs without presence of specific antibodies in the blood, Based on the type of skin lesions, location, the age of onset and course of disease, several clinical classifications of psoriasis,

Key word : Psoriasis Disease, Incidence, Management

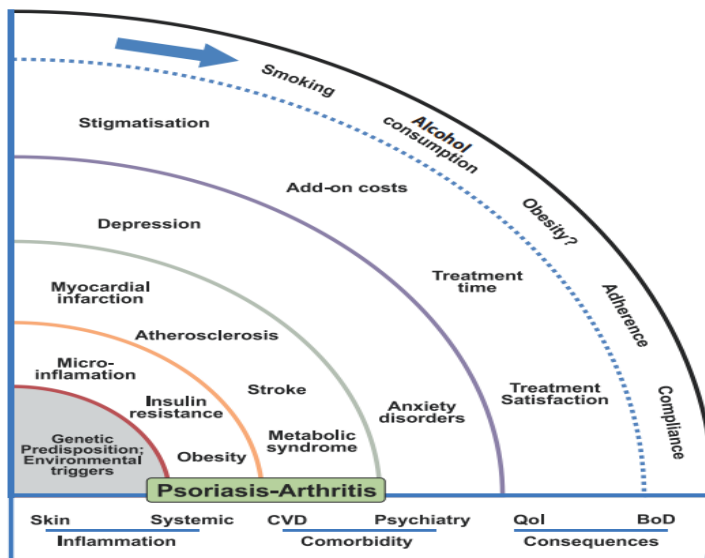
Introduction

Psoriasis is a chronic, noncommunicable, painful, disfiguring and disabling disease for which there is no cure and with great negative impact on patients' quality of life (QoL). It can occur at any age, and is most common in the age group 50–69 .which there is no cure and with great negative impact on patients' quality of life (QoL). It can occur at any age, and is most common in the age group 50–69 (1). The reported prevalence Psoriasis is a chronic, noncommunicable, painful, disfiguring and disabling disease for of psoriasis in countries ranges between 0.09% (2) and 11.4% (3), making psoriasis a serious global problem. The etiology of psoriasis remains unclear, although there is evidence for genetic predisposition (4). The role of the immune system in psoriasis causation is also a major topic of research. Although there is a suggestion that psoriasis could be an autoimmune disease, no autoantigen that could be responsible has been defined yet. Psoriasis can also be provoked by external and internal triggers, including mild trauma, sunburn, infections, systemic drugs and stress (5). Psoriasis involves the skin and nails, and is associated with a number of comorbidities. Skin lesions are localized or generalized, mostly symmetrical, sharply demarcated, red papules and plaques, and usually covered with white or silver scales. Lesions cause itching, stinging and pain. Between 1.3% (6) and 34.7% (7) of individuals with psoriasis develop chronic, inflammatory arthritis (psoriatic arthritis) that leads to joint deformations and disability. Between 4.2% and 69% of all patients suffering from psoriasis develop nail changes (8–10). Individuals with psoriasis are reported to be at increased risk of developing other serious clinical conditions such as cardiovascular and other noncommunicable diseases (NCDs) (5,11,12). Psoriasis causes great physical, emotional and social burden (13–15). QoL, in general, is often significantly impaired (16–23). Disfiguration, disability and marked loss of

productivity are common challenges for people with psoriasis. There is also a significant cost to mental well-being, such as higher rates of depression, leading to negative impact for individuals and society (24,25). Social exclusion, discrimination and stigma are psychologically devastating for individuals suffering from psoriasis and their families. It is not psoriasis causing the exclusion – it is largely society’s reaction to it and this can change. Treatment of psoriasis is still based on controlling the symptoms. Topical and systemic therapies as well as phototherapy are available. In practice, a combination of these methods is often used. The need for treatment is usually lifelong and is aimed at remission. So far, there is no therapy that would give hope for a complete cure of psoriasis. Additionally, care for patients with psoriasis requires not only treating skin lesions and joint involvement, but it is also very important to identify and manage common comorbidity that already exists or may develop, including cardiovascular and metabolic diseases as well as psychological conditions.

In 2015, the notion is that psoriasis is a complex disease leading to numerous consequences for patients’ lives (Figure 1).

Figure 1. Synopsis on psoriasis as a chronic disease with a high comorbidity



BoD, burden of disease; CVD, cardiovascular disease; QoL, quality of life
 Source: Mrowietz et al. 2014 (26).

Incidence and prevalence

It affects men and women of all ages, regardless of ethnic origin, in all countries (1). Published data on the prevalence of psoriasis in countries vary between 0.09% (2) and 11.4% (3). In most developed countries, prevalence is between 1.5 and 5% (27). There is also evidence to suggest that the prevalence of psoriasis may be increasing (3). Many studies have demonstrated that psoriasis can impact substantially on QoL, even when a relatively limited body surface area (BSA) is affected (16,17,22,28–32). There are very few studies on the incidence of psoriasis. Registration of psoriasis cases is not compulsory, meaning reliable data are difficult to find. A review of published literature revealed only a handful of credible studies on the incidence of psoriasis. One study showed that the overall sex- and age-adjusted incidence rate of psoriasis in Minnesota in the United States, between 1980 and 1983, was estimated at 0.60 per 1000 person-years (33). A study of 511 532 individuals in Italy between 2001 and 2005 reported an incidence of psoriasis (adults receiving a first-ever diagnosis of psoriasis) of 2.30–3.21 cases per 1000 person-years (12). In 2012, a 2-week psoriasis screening study via medical consultation was performed in three countries simultaneously – Algeria, Tunisia and Morocco, where incidence of psoriasis was estimated at 10.36, 13.26 and 15.04 per 1000, respectively (34). Relatively more studies have focused on the prevalence of psoriasis. A review of published literature found 68 full articles and reports estimating prevalence rates for 20 countries (Table 1). It should be noted, however, that the data they contain are extremely difficult to compare with each other, due to the different methodologies of the studies and their limitations. The main problems are differences in the definition of prevalence (point prevalence, cumulative prevalence, period prevalence), case definition of psoriasis (self-reported, physician diagnosed), the population ages studied (children only,

adults only, any age group) and the sampling techniques (questionnaires, clinical examination, combination of clinical examination and questionnaire, registry data). This difference in methodology clearly impacted on the prevalence rates. Depending on the region, the prevalence studies varied from 0.09% in the United Republic of Tanzania (2) to 11.4% in Norway (3). A very weak correlation between geographic latitude and psoriasis prevalence was found (35). Psoriasis appears to occur most commonly in populations of northern Europe (3,36) and least in populations of eastern Asia (37–45). Some studies investigated the ethnic differences in the prevalence of psoriasis. According to a 2001 study in the United States, people with Caucasian or Black ancestry and others had a prevalence of 2.5%, 1.3% and 1.0%, respectively (14). In another United States study from 2009–2010, these differences were higher, with the prevalence for Caucasians, Blacks, Hispanics and others at 3.6%, 1.9%, 1.6% and 1.4%, respectively (46). Psoriasis can occur at any age. While some studies indicated the average age of onset for psoriasis was 33 years of age, and 75% of cases occurred before 46 years of age (50), others suggested that the onset of psoriasis was bimodal with two peaks of the disease – the first between 16 and 22 and the second between 57 and 60 years of age (51). Psoriasis also occurs in children. However, there are few studies on the incidence or prevalence of psoriasis in children, and those that do exist reveal variations between almost absence of juvenile psoriasis in Taiwan, China (38,39) and 1.37% lifetime prevalence in 0–17-year-old children in Germany (49). The largest study on prevalence among children was carried out in Germany in 2007 (48). Data collected from a health insurance company database of about 1.3 million individuals showed the prevalence of psoriasis in children younger than 18 years of age was 0.40%, and increased roughly linearly over the life course. In 2008–2009, a study of 2194 children in Egypt (47) found that the prevalence of psoriasis among people 18 years of age and younger was 0.05%.

It can manifest in many different forms. In addition to the involvement of skin and nails, inflammatory arthritis (psoriatic arthritis) may develop. Patients suffering from psoriasis are at higher risk of developing cardiovascular and other NCDs (52). Moreover, psoriasis affects mental health and people suffering from the disease experience significant social stigma. In assessing the severity of psoriasis, more than 40 different tools are being used (53). Commonly used measures for scoring the severity of psoriasis include the Psoriasis Area and Severity Index (PASI), and the Physician Global Assessment. Clinicians assess the severity of the disease, taking into account the degree of scaling, redness, thickness of the skin lesions or the size of the BSA occupied by psoriasis. QoL measures are also important.

Risk factor of psoriasis



- **Tobacco.** The risk of onset of psoriasis in smokers is twice that of non-smokers. In addition, it seems that the more quantity and the longer you smoke, the higher the risk.(54).
- **Alcohol.** As with smoking, alcohol use also seems to play a role in the onset of psoriasis. Furthermore, alcohol increases severity and may decrease treatment efficacy.(55).
- **Obesity.** Or weight gain has been shown to be an independent risk factor for psoriasis. There are two suspected reasons for this. Firstly, obesity promotes inflammation and, therefore, the onset of psoriasis. Secondly, psoriasis affects mood and can hinder physical activity, all of which favors the development of obesity.(56)

- **Infections.** Infections can trigger and exacerbate psoriasis. Pharyngitis caused by a bacterium called streptococcus is a typical trigger of guttate psoriasis. Also, the human immunodeficiency virus (HIV) can trigger psoriasis.(57).
- **Drugs.** Some drugs can trigger psoriasis, for instance, β blockers (used to treat heart disease) and lithium (a drug for bipolar disorder).(58).
- **Stress.** Stress is associated with both the onset of psoriasis and flare-ups in people previously diagnosed with psoriasis.(59).
- **Weather.** Skin psoriasis and psoriatic arthritis usually worsen in the winter and improve throughout summer. The National Psoriasis Foundation explains that this is due to air dryness, poor sunlight and cold weather.(60)
- **Other skin lesions.** Any alteration of the skin—such as scratches, piercings or sunburns—can trigger psoriasis lesions to appear. This is called Koebner's phenomenon.(60-61).

Skin and nails

Based on the type of skin lesions, location, the age of onset and course of disease, several clinical classifications of psoriasis are used (Table 2). The most frequently reported symptoms connected to psoriasis are (62): n scaling of the skin in 92% n itching in 72% n erythema in 69% n fatigue in 27% n swelling in 23% n burning in 20% n bleeding in 20% of individuals. According to another study, flaking or scaling in the non-scalp area occurred in 89% and flaking or scaling of scalp areas in 62% of patients. Itching or scratching were observed in 87%, rash in 74%, skin pain in 62%, bleeding in 58%, redness in 57%, flare-ups in 49%, joint pain in 42%, skin cracking in 39%, dry skin in 34%, physical discomfort in 32%, burning in 28% and nail problems in 22% (7).

Table 2. Common types of psoriasis and their manifestations

<p>Psoriasis vulgaris (plaque psoriasis)</p>	<ul style="list-style-type: none"> ■ The most common type of psoriasis, affects between 58% (29) and 97% (45) of all patients. ■ Inflammatory red, sharply demarcated, raised, dry, differently sized plaques, usually covered by silvery or white scales. ■ Involves the scalp and the area behind the ears, the extensor surfaces of the fore arms and shins (especially elbows and knees), trunk, face, palms, soles and nails. 		<p>Psoriasis vulgaris in adult patients. ©Ulrich Mrowietz, Psoriasis Center Kiel.</p>
<p>Intertriginous psoriasis (psoriasis in folds and genital area)</p>	<ul style="list-style-type: none"> ■ Affects between 12% (105) and 26% (21) of all cases of psoriasis. ■ Deep red or white, flat, sharply demarcated, wet patches or plaques, scales are usually absent. ■ Affects almost exclusively flexural body sites – axillae, antecubital fossae, inframammary creases, umbilicus, groins, genital area, gluteal cleft, popliteal fossae and other body folds. 		<p>Intertriginous psoriasis in adult patients. ©Ulrich Mrowietz, Psoriasis Center Kiel.</p>
<p>Guttate psoriasis (droplet psoriasis)</p>	<ul style="list-style-type: none"> ■ Affects between 0.6% (45) and 20% (80) of individuals diagnosed with psoriasis and usually occurs in childhood and adolescence. ■ Reddish, drop-like papules and plaques, mainly involving the trunk, arms and legs. ■ Onset is associated with streptococcal infection of the upper respiratory tract and prior skin symptoms (106). 		<p>Guttate psoriasis in an 8-year-old girl. ©Michael P Schön, Universitätsmedizin Göttingen.</p>
<p>Pustular psoriasis</p>	<ul style="list-style-type: none"> ■ Affects between 1.3% (45) and 12% (105) of all cases of psoriasis. ■ Coalescing pustules, filled with non-infectious pus. ■ Involves either small areas such as palms of the hands, fingertips, nails and soles of the feet, or the entire body surface can occur as a single episode after a trigger. 		<p>Generalized pustular psoriasis in an adult female patient. ©Michael P. Schön, Universitätsmedizin Göttingen.</p>
<p>Erythrodermic psoriasis</p>	<ul style="list-style-type: none"> ■ Affects between 0.4% (45) and 7% (105) of all cases of psoriasis. ■ Fiery redness and exfoliation of most of the body surface. ■ The most serious type of psoriasis, potentially life-threatening, because it can lead to hypothermia, hypoalbuminemia and high output cardiac failure. 		<p>Erythrodermic psoriasis in adult male patient. ©Matthias Augustin, University Medical Center Hamburg.</p>

Based on a review of the literature, the prevalence of nail psoriasis ranges between 4.2% (8) and 69% (9) of all patients suffering from psoriasis. Nail psoriasis may occur with the involvement of the skin or it may occur alone, being the only symptom of psoriasis. Nail psoriasis is not only a problem of an aesthetic nature, but can also restrict manual dexterity. The nail disease may be acute or chronic, with varied severity. There may be involvement of only a single nail or of all nails associated with severe nail destruction or loss (Figure 5).

Figure 5. Nail psoriasis



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Nail psoriasis may be a predisposing factor for fungal or bacterial infections, which occur in 4.6% to 30% of cases of nail psoriasis (63). Patients suffering from nail psoriasis have significantly worse psoriasis severity scores, compared to patients without nail involvement (64). In addition, they report poorer QoL and a greater number of days unfit for work (64). These patients were also more likely to be admitted to the hospital and more often suffered from psoriatic arthritis.

Psoriatic arthritis

In addition to the skin, psoriasis can be associated with an inflammatory arthritis known as psoriatic arthritis, which involves the joints of the spine and other joints. This occurs without presence of specific antibodies in the blood (seronegative spondyloarthropathy). The rheumatoid factor (antibody occurring in rheumatoid arthritis) is also negative. A review of the literature showed that psoriatic arthritis affects between 1.3% (6) and 34.7% (7) of patients diagnosed with psoriasis. There are no data on sex predilection. In a United States population, it was observed that psoriatic arthritis occurred more frequently in Caucasian patients than in other ethnic groups (65). Two large consecutive German studies from dermatological practices that assessed the prevalence of arthritis from examinations by rheumatologists in 2005 and 2007 was 20.6% (10) and 19.6% (66), respectively.

The clinical symptoms are variable, however, peripheral arthritis, spondylitis, enthesitis (inflammation of the sites where tendons insert into the bone), arthritis in the fingers and dactylitis (profuse swelling of the fingers or toes) are considered to be most common (Figure 6). Psoriatic arthritis can lead to chronic pain and change in physical appearance. Patients suffering from psoriatic arthritis have reduced physical fitness, compared to psoriasis patients without it (22). Typically, psoriatic arthritis occurs in conjunction with longstanding skin lesions, although rarely it occurs alone, in the absence of psoriasis.

Figure 6. Psoriasis arthritis



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Associated diseases

Numerous studies have reported the coexistence of psoriasis and other serious systemic diseases, most often mentioned are cardiovascular diseases, metabolic syndrome, including hypertension, dyslipidemia and diabetes mellitus, and Crohn's disease. Even children show increased rates of comorbidity compared to unaffected infants, or those with atopic eczema (11,49). Most publications discuss the association between cardiovascular disease and psoriasis. Patients diagnosed with psoriasis have an increased burden of subclinical atherosclerosis and vascular inflammation (67). They also have significantly higher levels of serum lipids, including triglycerides and total cholesterol, compared to healthy individuals (68).

Moreover, psoriasis is associated with atrial fibrillation and stroke, which may be aggravated in young patients (69). However, it should be noted that at present it is not known whether psoriasis is an independent risk factor for the development of cardiovascular disease. Obesity or weight gain has been shown to be an independent risk factor for psoriasis. Tobacco smoking is another risk factor (70). Frequency of metabolic syndrome, depression and erectile dysfunction has also been found to be significantly higher in patients diagnosed with psoriasis (71). In some diseases and subgroups of patients, psoriasis has been shown to be an independent risk factor for non-alcoholic fatty liver disease (72). In spite of a high number of studies on the association of psoriasis with comorbidity, the causality and independence on some associated diseases remain unclear and need further research (73,74).

Psychological and mental health

Psoriasis is not only a disease that causes painful, debilitating, highly visible physical symptoms. It is also associated with a multitude of psychological impairments. For many reasons, psoriasis can be psychologically devastating. Patients' lives become especially difficult when psoriasis is present in highly visible areas of the skin such as the face and hands. Related psychological problems can affect every day social activities and work. It causes embarrassment, lack of self-esteem, anxiety and increased prevalence of depression (24,25). Patients with psoriasis report experiencing anger or helplessness, and they disclose a higher rate of suicidal ideations than other patients. In a study of 127 patients with psoriasis, 9.7% reported a wish to be dead and 5.5% reported active suicidal ideation at the time of study (75).

Influences from the workplace

In the workplace, psoriasis may be triggered or aggravated by mechanical or other physical impact on unprotected body locations (76). In patients who claimed occupational hand dermatitis, psoriasis was found to be the cause of the disease in 3.8% (77)–6.5% (78) of cases. Special gloves and other personal protective equipment may reduce lesions and enable the person to continue working, which otherwise may be jeopardized (77,79).

Social participation

Psoriasis can affect relationships at home, school or work as well as sexual relationships and thus reduce QoL and cause psychological strain (15,17–19,32,80–84). Patients are frequently stigmatized and excluded from normal social environments, including schools, workplaces and swimming pools. As a result, they often avoid social activities and commonly report experiencing loneliness, isolation, feelings of being unattractive and frustration. A study conducted in the United States evaluated which spheres of patients' lives suffered most (7). Seven impact areas were considered: emotional (mood, feelings); social (friends, activities); the family (activities, responsibilities); professional (work, career); physical functioning; sexual intimacy; and educational life. The results showed that 98% of patients reported that psoriasis impacted on their emotional life, 94% on their social life, 70% on family life, 68% on their professional career, 38% on physical functioning, 17% on sexual intimacy, and 21% on their educational life. These values were all higher for patients with psoriatic arthritis.

Principles of psoriasis management

Psoriasis is by nature a chronic, incurable disease with an unpredictable course of symptoms and triggers. The consequence is often life-long treatment, therefore, all treatments must meet high quality criteria that are not only efficacious, but also safe over long periods. As the cause of psoriasis is still unknown, treatment is only available to control symptoms. Treatments include a range of topical and systemic therapies as well as phototherapy. It also involves treatment for reducing pain and disability from arthritis and other manifestations. Care for patients with psoriasis requires more than management of the skin lesions and joint involvement. The complexity of psoriasis means that prescribing drugs in isolation is insufficient to control the disease and a holistic, whole person approach to care is needed. Management of psoriasis also includes screening for associated diseases such as hypertension, dyslipidemia, diabetes mellitus and cardiovascular disorders as well as their complications such as myocardial infarction and stroke (Figure 7). Psoriasis patients are more likely to suffer from depression and anxiety disorders and have an increased rate of suicidal ideation. Screening at regular intervals for these associated diseases and for co-medication to prevent drug-drug interactions or drug-triggered psoriasis as well as recognition of trigger factors and their treatment are an essential part of psoriasis management.

Treating the skin manifestations

There are three major forms of therapy – topical therapy; phototherapy; and systemic therapy (Table 3). Treatment is based on psoriasis severity at the time of presentation. Mild psoriasis usually is treated with topical therapy, progressing to phototherapy in the case of insufficient response. Moderate to severe psoriasis requires systemic therapy. Commonly used first-line drugs include methotrexate, ciclosporin, acitretin and etretinate. In some countries, other systemic therapies such as biologic agents and fumaric acid esters are available (8). All treatments for psoriasis, apart from retinoids, are primarily anti-inflammatory, and subsequently lead to slowed epidermal keratinocyte turnover and a flattening of plaques. In many countries, other treatments may play a prominent role, including traditional Chinese medicine, self-treatment with over-the-counter products (non-prescription drugs) and climatotherapy.

Table 3. Treatment options for psoriasis

Topical therapies (ointments, creams, lotions, gels, or foams applied to the skin)	Vitamin D ₃ analogues
	Corticosteroids e.g. betamethasone and hydrocortisone
	Anthralin/dithranol
	Topical retinoids
Phototherapy (UV-light therapy)	
Systemic therapies (tablets or injections/infusion)	Methotrexate
	Ciclosporin
	Acitretin
	Biologic agents
	Oral small molecules

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