What is psoriasis?
Psoriasis is a chronic inflammatory condition affecting approximately 2% of the world’s population\(^1,2\), or around 125 million people. This common and distressing disease is not simply a cosmetic problem – even patients with very mild symptoms find their condition affects their everyday life\(^3\).

There are a number of different types of psoriasis\(^4\). **Plaque psoriasis** is the most common, accounting for 80 to 95% of cases and is characterized by thick and extensive skin lesions, called plaques, known to cause itching, scaling and pain\(^1\). Psoriasis symptoms can begin at any age, including in childhood, but the disease mainly affects adults\(^5\).

Over one third of patients with plaque psoriasis have a level of disease that is classed as **moderate-to-severe**\(^6\), which can be difficult to treat\(^5\). Patients are considered to have moderate-to-severe symptoms when, for example, over 10% of their body surface are affected, or when sensitive areas of the body are involved, such as hands or feet, which impacts quality of life\(^7,8\).

The role of the immune system in plaque psoriasis
It is thought that psoriatic symptoms start when a combination of environmental triggers and genetic factors lead to stress in the cells of the skin. This activates the immune system, when immune cells move from the lower layers of the skin to the upper-most layer, or ‘epidermis’\(^1\). These displaced immune cells produce molecules called cytokines, which coordinate communication between the cells of the immune system.

One cytokine considered to play a key role is interleukin (IL)-17A. IL-17A typically helps organize the immune system in response to infection with a pathogen (germ)\(^9\). If IL-17A reaches abnormal levels of activity, as in the case of autoimmune diseases such as psoriasis, it can mean that an immune reaction is launched against the body’s own tissues\(^9,10\). In psoriasis, IL-17A is one of the key cytokines that acts on skin cells and triggers an inflammatory response\(^1\). This ultimately results in the inflammation and thickening of the skin to form the plaques typical of psoriasis\(^1\).

The impact of psoriasis
Psoriasis has a number of major negative effects on patients, demonstrable by a significant detriment to quality of life. The effect of psoriasis on patients’ health-related quality of life has been shown to be similar to diseases such as cancer, heart attack, arthritis, type 2 diabetes and depression\(^11\). This reduction in quality of life is caused by both the physical and psychological burdens that psoriasis poses. The physical factors that contribute to the bodily pain experienced by patients can include burning sensations, joint pain, itching and skin soreness. These factors influence patients’ activity and some have a detrimental impact on their psychological state\(^11\).

Patients with psoriasis report feelings of stigmatization in society due the appearance of their skin, and this can lead to depression and suicidal thoughts in over 5% of patients\(^4\).

If given the choice, people with severe psoriasis have said that they would shorten their lifespan by over 4 years in exchange for being disease-free\(^4\). Therefore, effective treatment is high on the agenda for improving the lives of psoriasis sufferers.
Psoriasis in hard-to-treat areas
Psoriasis inflammation can involve serious symptoms affecting different parts of the body. Some areas of the body are particularly difficult to treat when afflicted with psoriasis, including the hands, feet, nails, scalp and areas where the skin rubs together, such as the armpits. The visibility of areas affected with psoriatic lesions is a major influencing factor in the emotional wellbeing of patients. Therefore psoriasis in areas such as the nails significantly affects patients’ self esteem and sociability.

Patients with hand, foot and nail psoriasis endure significantly greater physical disabilities than those whose psoriasis is limited to other parts of the body. This includes functional disability, burning sensations, skin soreness, prolonged duration of psoriasis and the risk of joint involvement and secondary infections. Estimated to affect between 10% and 55% of all psoriasis patients, nail, hand and foot psoriasis is notoriously difficult to treat and often requires systemic treatment such as biologics to maintain an adequate clinical response.

The treatment challenge
Traditional treatments for psoriasis include topical therapies (creams and gels), phototherapy, and systemic medicines.

Over a million people reported dissatisfaction with their psoriasis therapy in a national study conducted in the US, and in Europe over 70% of 18,386 patients surveyed reported low to moderate levels of satisfaction with their treatment. Researchers are now working to understand the reasons behind this widespread dissatisfaction and low treatment adherence. One recent study based on questionnaire results from 1,095 patients with moderate-to-severe psoriasis found that perceived treatment ineffectivity and side effects were the main reasons for discontinuing their therapy.

Although psoriasis treatment is individualised to specific patients, patients with moderate-to-severe psoriasis tend to require more intensive therapy with traditional treatments, which has been linked to adverse long-term affects. Also, patients with plaque psoriasis of the hands, feet and nails need to be treated with systemic medicines as the disease cannot be controlled by topical treatments alone, making them more challenging to treat than other forms of psoriasis.

It is hoped that targeting molecules, such as IL-17A, which lie at the heart of the immune mechanisms that cause psoriasis symptoms, will result in promising new treatments to address these current concerns.

References

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AINPR013-09/12