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Occupational Skin Diseases: Psoriasis

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ABSTRACT

Psoriasis is an inflammatory disease characterized by the formation of, most often, erythematous papules and plaques with clear boundaries and silvery scales on the surface. A number of factors play a role in the development of the disease, incl. genetic. Common triggers include trauma, infections, and certain medications. Symptoms are usually minimal, but itching may vary in severity, from mild to severe. The main complaint may be a cosmetic defect caused by rashes. Some patients develop severe forms of the disease, accompanied by joint damage with severe arthralgia (psoriatic arthritis).

Psoriasis is an excessive proliferation of epidermal keratinocytes associated with inflammation of the epidermis and dermis. Psoriasis affects 1 to 5% of the population worldwide; fair-skinned people are at an increased risk of developing the disease, while blacks are at a lower risk of developing psoriasis. The peak incidence of psoriasis is approximately bimodal, most often the disease begins at the age of 16-22 and 57-60 years, but the disease can manifest at any age. The reason for the development of psoriasis is unclear, but stimulation of epidermal keratinocytes plays a role in pathogenesis; T cells appear to play a major role. Often the family history of patients is burdened, and the relationship between the development of psoriasis and certain genes encoding the major histocompatibility complex (Cw6, B13, B17) is revealed. Genome-wide genetic linkage analyzes have identified multiple susceptibility loci for psoriasis; The PSORS1 locus on chromosome 6p21 plays the most important role in determining a patient's susceptibility to developing psoriasis. It is believed that some external influence provokes an inflammatory reaction with subsequent hyperproliferation of keratinocytes.

Well-known triggers include:

- ✓ trauma (koebner phenomenon)
- ✓ sunburn
- ✓ hiv infection
- ✓ beta-hemolytic streptococcal infection (resulting in guttate psoriasis)
- ✓ drugs (especially beta-blockers, chloroquine, lithium, angiotensin-converting enzyme inhibitors, indomethacin, terbinafine, and interferon-alpha)
- ✓ emotional stress
- ✓ alcohol consumption

- ✓ tobacco smoking
- ✓ obesity

The rashes are asymptomatic or accompanied by itching and are most often localized on the skin of the scalp, extensor surfaces of the elbows and knees, sacrum, buttocks (often in the gluteal crease) and in the genital area. Nails, skin around the eyebrows, axillary pits, navel, and perianal region may also be affected. Rashes can be widespread, merge with the formation of lesions covering entire anatomical regions and skin areas between them. Depending on the type of disease, the rash may have a different appearance.

External Therapy

Glucocorticosteroids are usually used topically, but they can be injected into small or resistant lesions. (CAUTION: Systemic glucocorticosteroids may aggravate exacerbations or contribute to the development of pustular psoriasis and should not be used to treat psoriasis.) Twice a day, glucocorticosteroids are used for external use. Glucocorticosteroids are most effective when applied under an occlusive polyethylene dressing or in the form of a drug embedded in a film; during the day, a glucocorticosteroid cream is applied without an occlusive dressing. The effective doses of corticosteroids are selected depending on the prevalence of rashes.

As the rash regresses, glucocorticosteroid drugs should be applied less frequently or switched to drugs of lesser strength to minimize the development of skin atrophy at the site of application, as well as the formation of striae and telangiectasias. Ideally, after approximately 3 weeks, the emollient, vitamin D3 analogue, or calcineurin inhibitor should be switched to corticosteroids for 1 to 2 weeks (as a rest period); this substitution limits the dose of corticosteroids, reduces the risk of local side effects of corticosteroids (eg, skin atrophy, telangiectasias, easy bruising, striae), and prevents tachyphylaxis (weaker response to a drug after sequential dosing). The use of topical glucocorticosteroids can be quite expensive due to the large amounts (about 1 ounce, or 30 g) required for each application in a large area. External application of glucocorticosteroid preparations for a long time on large areas of the skin can have a systemic effect and cause an exacerbation of psoriasis. In the presence of small, thick, localized or resistant lesions, strong glucocorticosteroid drugs are used under an occlusive dressing or flurandrenolide film; these dressings are left overnight and changed in the morning. Relapses after the abolition of glucocorticosteroid drugs develop faster than after the abolition of other drugs.

Vitamin D3 analogs (eg, calcipotriol [calcipotriene]) are synthetic external vitamin D analogs that normalize proliferation and differentiation of keratinocytes; they can be used as monotherapy or in combination with external glucocorticosteroid drugs. Some experts recommend applying calcipotriol 5 days a week, and on weekends - calcipotriol and glucocorticosteroids.Calcineurin inhibitors (eg, tacrolimus, pimecrolimus) are available as topical preparations and are generally well tolerated. They are less effective than glucocorticosteroid drugs, but they avoid the adverse effects associated with treatment with glucocorticosteroids on the skin of the face and intertriginous psoriasis. It is not clear whether these drugs increase the risk of developing lymphoma and skin cancer.

Tazarotene is a topical retinoid. It is less effective than glucocorticosteroids alone, but is a useful adjunct to treatment.Other adjuvants for topical therapy include emollients, salicylic acid, tar and anthralin.Emollients include emollients in the form of creams, ointments, petroleum jelly, paraffin, and even hydrogenated vegetable (edible) oils. They reduce flaking and are most effective when applied twice a day and immediately after washing. The rashes may appear redder as the scales shed off or if the scales become transparent. Emollients are safe and should probably always be used for mild to moderate psoriasis. External TherapyGlucocorticosteroids are usually used topically, but they can be injected into small or resistant lesions. (CAUTION:

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preparation after 20 -30 minutes after application. The use of the liposomal form of anthralin also avoids some of the inconveniences associated with the use of anthralin.

Phototherapy

Phototherapy using UV light is commonly used in patients with advanced psoriasis. The mechanism of action is unknown, although UV-B light slows down DNA synthesis and may cause mild generalized immunosuppression. In PUVA therapy (psoralen plus ultraviolet A), after ingestion of the photosensitizer methoxypsoralen, long-wave UV-A light (330–360 nm) is irradiated. PUVA has an antiproliferative effect and helps to normalize the differentiation of keratinocytes. Irradiation is started with low doses, which are then increased according to tolerability. If the dose of the drug or radiation is too high, severe burns can develop. Although therapy is less laborious and uncomfortable than topical therapy, repeated therapy sessions may increase the incidence of UV-induced skin cancer and melanoma. A smaller dose of UV radiation is required when taking retinoids (so-called re-PUVA therapy). UPUVL light (311–312 nm) used without psoralens is comparable in efficacy to PUVA therapy. Excimer laser therapy is a phototherapy variant based on the application of laser radiation at a wavelength of 308 nm in the area of psoriatic plaques.

Immunosuppressants

Oral methotrexate is effective in the treatment of severe disabling psoriasis, especially severe psoriatic arthritis, widespread erythrodermic or pustular psoriasis that does not respond to topical therapy or phototherapy using ultraviolet (narrow-band UVB) or PUVA. Methotrexate appears to inhibit the rapid proliferation of epidermal cells. Kidney, liver and blood counts should be monitored. Methotrexate is given in various doses, so only physicians experienced in the treatment of psoriasis with methotrexate should administer this therapy.Cyclosporine can be used for severe psoriasis. The duration of treatment with this drug should be limited to a few months (rarely up to 1 year) and ciclosporin should be alternated with other therapies. Its effects on the kidneys and potentially long-term effects on the immune system preclude freer use of the drug.

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