Case studies in dermatology

Case study 3

This case study aims to

- Help understand the various clinical presentations of psoriasis
- Discuss the treatment of psoriasis

16 YEAR OLD MALE WITH RASH AND ITCHING ON THE ELBOWS

Since the last two months, Mr. G, 16 years old, developed a mild, itchy sensation on his elbows.
Recently, he experienced an exacerbation of these annoying and painful symptoms. The itch in the areas around his elbows was the worst. His skin would turn red and become inflamed. Other areas of his body were affected, and the back of his ears, the base of his neck, and his scalp developed sores. The rashes on his elbows have become thick and they bleed if he tries to remove them. He has visited a dermatologist for consultation.

Diagnosis: Psoriasis

- Psoriasis is a chronic skin disease characterized by accelerated epidermal turnover and hyperplasia.
- Clinically it manifests as well defined erythematous papules and plaques covered with silvery scales.

1. What are the types of psoriasis?

Types of psoriasis:

- *Plaque Psoriasis*:
    - The skin is red and covered with silvery scales. Circular- to oval-shaped red plaques that sometimes itch or burn are typical of plaque psoriasis.
    - The patches usually are found on the elbows, knees, trunk, or scalp but may be found on any part of the skin.
- *Guttate psoriasis*
    - Looks like small, salmon-pink (or red) drops on the skin.
    - Usually, a fine scale is on the droplike lesion that is much finer than the scales in plaque psoriasis.
    - Guttate psoriasis usually occurs on the trunk, arms, or legs. However, it may cover a large portion of the body

    - The trigger to the disease is usually a streptococcal (bacterial) infection. The eruption of the lesions on the skin usually occurs at 2-3 weeks after the person has streptococcal sore throat.
- *Pustular psoriasis*
    - People with pustular psoriasis have clearly defined, raised lesions on the skin that are filled with pus (pustules). The skin under and around these lesions is reddish.
- *Erythrodermic Psoriasis.*
    - A very large area of the body, if not most of the body, is bright red and inflamed.
    - The body can appear to be covered in a red, peeling rash. The rash usually itches or burns.
- *Nail Psoriasis*
    - Can affect the fingernails and toenails.
    - Psoriasis of the nails involves any of a number of changes to the nail area. Clear yellow-red nail discoloring that looks like a drop of blood under the nail plate may occur. Little pits may form in the nails. These pits develop when cells are lost from the nail's surface.
- *Scalp Psoriasis*
    - The scalp may have fine dry scaly skin, or have heavily crusted plaque areas.
    - The plaque can flake off or peel off in crusted clumps.
- *Psoriatic arthritis*
    - Condition in which a person has both psoriasis and arthritis.

2. What are the common areas of distribution of psoriasis?

- The lesions are usually symmetrically distributed and are characteristically located on the ears, elbows, knees, umbilicus, gluteal cleft and genitalia.
- The joints (psoriatic arthritis), nails and scalp may also be affected

3. What are the various treatments for psoriasis?

Treatment of localized psoriasis

- *Topical Steroids*
    - They diminish the inflammation, stop the itching, and help cut down on cellular proliferation.
    - They are available as creams, ointments, lotions and liquids, so may be uniquely selected for use on various
    - Drawbacks to steroids are that overuse may lead to steroid atrophy (thinning of the skin) with associated stretch marks, blood vessels known as telangiectasis and even acne.
    - Also, there are risks of developing pustular psoriasis or addiction of the area.
- *Coal Tar*
    - It is thought to suppress epidermal DNA synthesis.
    - Coal tar is available as an ointment, cream, lotion, shampoo, bath oil and soap. Coal tar is most effective when it is used in combination with other agents, especially ultraviolet B light. Like calcipotriene, coal tar is effective when it is combined with topical corticosteroids. Coal tar shampoo can be used in combination with a corticosteroid scalp solution for the treatment of psoriasis on the scalp.
    - *Drawbacks*- Because coal tar is messy and malodorous and can stain clothing,

night-time application is recommended

- *Anthralin*
  - Anthralin is available in 0.1 percent to 1 percent ointments, creams and solutions. It is generally used on notably thick, large plaques of psoriasis, and therapy is initiated at low concentrations for short periods. The concentration and duration of contact with each treatment is gradually increased, up to a maximum of 30 minutes per application. Anthralin can be combined with ultraviolet phototherapy
  - Patients should be warned that anthralin has a tendency to stain any surface, including the skin, clothing and bathtub. Its use should be limited to well-demarcated plaques, and it should be applied with a cotton-tipped applicator or a gloved hand. Patients should be warned that normal skin surrounding the psoriatic lesion may become irritated if it comes in contact with anthralin.

Treatment of generalized psoriasis

- *Ultraviolet B (UVB) light,*
  - Highly effective
  - May cause acute phototoxicity
  - Little to no long-term side effects.
- *Psoralen plus ultraviolet A (PUVA)*
  - Highly effective; can be used as maintenance therapy.
  - High risk of acute phototoxicity.
  - Long-term risks include high risk of cutaneous malignancy
- *PUVA*
  - Therapy that combines a psoralen drug with UV-A light therapy.
  - Psoralen drugs make the skin more sensitive to light and the sun.
  - Methoxsalen is a psoralen that is taken by mouth several hours before UV-A light therapy.
  - UV-A is light with wavelengths of 320-400 nm. Therapy is usually given 2-3 times per week on an outpatient basis, with maintenance treatments every 2-4 weeks until remission.
  - Adverse effects of PUVA therapy- Nausea, itching, and burning. Long-term complications include increased risks of sensitivity to the sun, sunburn, skin cancer, and cataracts.
- *Ultraviolet-B (UV-B) and narrow-band UV-B ligh*t:
  - UV-B light is also used to treat psoriasis. UV-B is light with wavelengths of 290-320 nanometers (nm). (The visible light range is 400-700 nm.) UV-B therapy is usually combined with one or more topical treatments.
  - The major drawbacks of this therapy are the time commitment required for treatments and the accessibility of UV-B equipment.
- *Retinoids* (acitretin)
  - Moderately effective; best for pustular psoriasis
  - Potent teratogen; use in women of childbearing potential should be avoided
  - Causes dryness of skin. May cause elevation of triglycerides
- *Methotrexate*
  - Highly effective and can be used on a long-term basis.
  - Should not be used in noncompliant patients or when there is preexisting hepatic disease.
  - Can cause acute or chronic hepatotoxicity, and acute neutropenia and pancytopenia.

- *Cyclosporine*
    - Highly effective.
    - Careful monitoring required.
    - The long-term risk of renal toxicity, which may not be detectable by blood tests, limits long-term use.
- *Frequently used or well-studied combination therapies*
    - UVB plus topical calcipotriene
    - UVB plus topical coal tar
    - PUVA plus topical calcipotriene
    - PUVA plus retinoids
    - Acitretin plus topical calcipotriene
    - Cyclosporine plus topical calcipotriene
- *Infrequently used or less well-studied therapies*
    - UVB plus methotrexate
    - PUVA plus methotrexate

Case contd.

Patient was treated with clobetasole propionate cream. After two weeks, the local application was changed to fluticasone cream. Patient responded well to treatment and currently he just uses moisturizing cream.