Skin Conditions I (2 hours)

Dandruff

1-Dandruff is a **chronic relapsing condition of the scalp** which responds to treatment but return when the treatment is stopped. **Increased cell turnover rate** (twice the rate of those without the condition) is responsible for dandruff but the reason why cell turnover increases is unknown. The yeast *Malassezia ovale* may play a role in the pathogenesis of dandruff.
2-Dandruff is **rare in young children**, but incidence increases rapidly with age, **declining gradually thereafter** and **peaking in the second decade of life**. Both sexes are affected equally.

Patient Assessment

A-Appearance and location:

Dandruff is characterised by greyish-white flakes or scales on the scalp and an itchy scalp as a result of excessive scaling. In dandruff the epidermal cell turnover is at twice the rate of those without the condition. A differential diagnosis for severe dandruff could be psoriasis. In the latter conditions, both the appearance and the location would be different. In more severe cases of seborrhoeic dermatitis the scales are yellowish and greasy looking and there is usually some inflammation with reddening and crusting of the affected skin. In psoriasis the scales are silvery-white and associated with red, patchy plaques and inflammation.

B-Severity:

Dandruff is generally a mild condition. However, the itching scalp may lead to scratching, which may break the skin, causing soreness and the possibility of infection. If the scalp is very sore or there are signs of infection (crusting or weeping), referral should be indicated.

C-Previous history:

Dandruff is a chronic relapsing condition and there is usually a seasonal variation in symptoms which generally improve in summer.

D-Medication:

Various treatments may already have been tried. It is important to identify what has been tried and how it was used. If an appropriate treatment has been correctly used with no improvement, referral should be considered.

Treatment timescale:

Patient should consult a doctor if the condition does not improve or if it worsens after 1-2 weeks of treatment with non-prescription medications.

Management:

Note: All the treatment need to be left on **the scalp for 3-5 minutes** for full effect.

1-Ketoconazole 2% shampoo (Ketonaz®):

Which is used to treat acute flare-ups of dandruff or as a prophylaxis:

To treat acute cases: the hair should be washed thoroughly and then leaving the shampoo for 3-5 minutes before rinsing it off. This should be repeated every 3-days (i.e. twice weekly) for 2-4 weeks.
If used as a prophylaxis: the shampoo should be used once every one or two weeks
Note: it can be used by all age groups including pregnant women.

2-Selenium sulfide 2.5% shampoo (Selsun®):
Twice-weekly use for the first 2 weeks followed by weekly use for the next 2 weeks. Then it can be used as needed
Note:
A-It can be used for patient above 5 years. Manufacturers state to avoid in pregnancy and while breastfeeding due to lack of safety data.
B-The hair and scalp should be rinsed thoroughly after using it to prevent discoloration of the hair. And should not be used within 48 hours after coloring or perming the hair.
C-It also has an unpleasant odor. Gold, silver, and other metallic jewels should be removed before application to prevent discoloration
3-Other products containing **(Zinc pyrithione**, **salicylic acid**, **coal tar, …)** are also available.

Practical Points:
1-Patients need to understand that the treatment will not cure their dandruff permanently and that it will be sensible to use the treatment on a less frequent basis to prevent their dandruff from coming back.
2-It is the scalp that needs to be treated rather than the hair. The treatment should be applied to the scalp and massaged gently.
3-It is generally agreed that frequent washing (at least three times a week) is an important part of managing dandruff. Between applications of their treatment the patient can continue to use their normal shampoo.
4-Gel and hairspray can still be used and will not adversely affect treatment for dandruff.

Corn and Calluses

Corn form due to a combination of friction and pressure against one of the bony prominences of the feet. Inappropriate footwear is the frequent cause. (Continued pressure and friction cause hyperkeratosis). Friction (caused by loose fitting shoes and walking barefoot contribute to the development of calluses).

A-Clinical Features

1-Corns:

Corns have been classified into soft and hard corn.

Hard corns are generally located on the top of the toes. Soft corns form between the toes rather on the top of toes and are due to pressure exerted by one toe against another. Soft corns are most common in the fourth web space (they have whitened appearance and remain soft because of the moisture that is present between toes, which cause maceration of the corn).

2-Calluses:

Calluses are more diffuse areas of thickening on the sole or the side of the foot. Calluses appear as flattened, yellow-white, thickened skin. In women, the balls of the feet are a common site. Other sites that can be affected are the heel and lower border of the big toe.

B-Pain:

The resulting pain from corns may be severe and sharp (when downward pressure is applied) or dull and discomforting. Pain experienced with corns is a result of pressure between footwear and the toes. If footwear is taken off, then the pain is relieved. Patients with calluses frequently complain of a burning sensation resulting from fissuring of the callus.

C-Previous history:

Patients will often have a previous history of foot problems. The cause is usually due to prolonged wearing of poorly fitting shoes, such as high heels.

Treatment timescale:

Patient should seek medical attention if corn or callus is not removed after 14 days of treatment.

Treatment

Non-pharmacologic Therapy

A-Selection of the properly fitted footwear.

B-Epidermabrasion:

Epidermabrasion is a physical process that removes horny skin using a mechanical aid. Several gently abrasive materials and appliances are available, including foot files, pumice stones and synthetic pumice-like blocks.

Careful technique is important for the safe and successful removal of corns and calluses, using the following procedure:

–To soften the skin, soak the foot in mild soapy water for a few minutes or apply a moisturizing or softening cream.

–Rub soap on to the appliance and gently rub the corn or callus for 5 minutes.

–Repeat the process nightly for 1 week, then review. There is no need to remove the hard skin completely, just enough to relieve pain or irritation.

Pharmacologic Therapy

Salicylic acid

1-Salicylic acid in collodion –like vehicle

Paints and liquids contain 11–17% salicylic acid, often in a collodion-based vehicle. Collodions contain a nitrocellulose derivative, dissolved in a volatile solvent. On application, the solvent evaporates, leaving on the skin an adherent, flexible, water-repellent film containing the medicament.

Apply product once or twice daily until the corn or callus is removed (but not more than 14 days).

Note: do not let adjacent area of normal skin come in contact with drug. If they do, wash off the solution immediately with soap and water.

2- Salicylic acid plasters: Corn and callus plasters contain high concentrations (usually 40%). They should be changed every 1–2 days for about a week, after which the callosity should lift away easily.

3-An ointment containing 50% salicylic acid is also available; it should be applied nightly for 4 nights.

Acne

Acne vulgaris is a common condition in young people. It is not usually serious and resolves in most patients by the age of 25. However, it can have a significant psychological impact as it affects young people at a stage in their lives when they are especially sensitive about their appearance.

The pilosebaceous units in the dermis of the skin consist of a hair follicle and associated sebaceous glands. These glands secrete sebum -a mixture of fats and waxes- to protect the skin and hair by retarding water loss and forming a barrier against external agents.

Peak incidence of acne is 14-17 years in females and 16-19 years in males. The condition normally resolves in the majority of patients within 10 years of onset.

Etiology

Acne is the result of a combination of several factors. The main processes involved are as follows:

1. The hormonal changes that occur during puberty, especially the production of androgens, are thought to be involved in the causation of acne. Increased keratin and sebum production during adolescence are thought to be important contributory factors; the increased amount of keratin leads to blockages of the follicles and the formation of microcomedones.
2. A microcomedone can develop into a non-inflammatory lesion (comedone), which may be open (blackhead) or closed (whitehead), or into an inflammatory lesion (papule, pustule or nodule).
3. Excess sebum encourages the growth of bacteria, particularly *Propionibacterium acnes*, which are involved in the development of inflammatory lesions. Acne can thus be non-inflammatory or inflammatory in nature.

Patient Assessment

Age

Acne commonly occurs during the teenage years and its onset is most common at puberty, although it may start to appear a year or so earlier.

Very young

Acne is extremely rare in young children and babies and any such cases should be referred to the doctor for investigation since an androgen secreting (hormone-producing) tumour may be responsible.

Older

For patients in whom acne begins later than the teenage years, other causes should be considered, including drug therapy and occupational factors. Oils and greases used at work can precipitate acne and it would be worth asking whether the patient comes into contact with such agents. Acne worsens just before or during menstruation in some women; this is thought to be due to changes in progesterone levels.

Severity

Only mild acne can be managed by the pharmacist using OTC products, moderate and severe acne should be referred.

1-**Mild acne:** Patients suffering from mild acne characteristically have predominately open and closed comedones with few inflammatory (papulopustular) lesions mainly confined to the face. Mild acne is therefore characterized by the presence of a few to several papules and pustules the, but not nodules

2-**Moderate acne:** A patient with moderate acne has many inflammatory lesions that are not confined to the face. Lesions are often painful and there is a possibility of mild scaring.
3-**Severe acne:** A patient with severe acne has all the characteristics of moderate acne plus the development of cysts. Lesions are often widespread involving the upper back and chest. Scarring will usually result.

Affected areas

In acne, affected areas may include the face, neck, center of the chest, upper back and shoulders, i.e. all areas with large numbers of sebaceous glands. Rosacea is a skin condition that is sometimes confused with acne. Occurring in young and middle-aged adults, rosacea has characteristic features of reddening, papules and pustules. Only the face is affected. It is normally seen in patients over 40 years of age and is more common in women than in men.

Medication

The pharmacist should establish the identity of any treatment tried already and its method of use. Inappropriate use of medication, e.g. infrequent application, could affect the chances of success. Information about current therapy is important, since acne can sometimes be drug induced. *Lithium*, *phenytoin* and the progestogens, levonorgestrel and norethisterone (e.g. in the combined oral contraceptive pill), may be culprits. If acne is suspected as a result of drug therapy, patients should be advised to discuss this with their doctor.

When to refer

Moderate and Severe acne
Failed medication
Suspected drug-induced acne

Treatment timescale

A patient with mild acne, which has not responded to treatment within 8 weeks, should be referred to the doctor.

Management

The general aims of therapy are to remove follicular plugs so that sebum is able to flow freely and to reduce the number of bacteria on the skin. Treatment should therefore reduce comedone formation. The most useful formulations are lotions, creams and gels. Gels with an alcoholic base dry quickly but can be irritating. Those with an aqueous base dry slower but are less likely to irritate the skin. A noncomedogenic moisturiser can help if the skin becomes dry as a result of treatment.

Benzoyl peroxide (2.5%, 5%, and 10% gels, lotion, cream)

Benzoyl peroxide has both antibacterial and anticomedogenic actions and is the first-line OTC treatment for inflammatory and noninflammatory acne. Anti-inflammatory action occurs at all strengths. Anticomedogenic action is low and has the greatest effect at higher strengths. It has a keratolytic action, which increases the turnover of skin cells, helping the skin to peel. Regular application can result in improvement of mild acne. At first, *benzoyl peroxide* is very likely to produce reddening and soreness of the skin, and patients should be warned of this. Treatment should start with a 2.5 or 5.0% product, moving gradually to the 10.0% strength if needed. Gels can be helpful for people with oily skin and

creams for those with dry skin. Washing the skin with a mild soap or cleansing product rinsed off with water before applying *benzoyl peroxide* can help by reducing the amount of sebum on the skin.
Benzoyl peroxide prevents new lesions forming rather than shrinking existing ones. Therefore it needs to be applied to the whole of the affected area, not just to individual comedones, and is best applied to skin following washing. During the first few days of use, the skin is likely to redden and may feel slightly sore. Stinging, drying and peeling are likely. Warning should be given that such an irritant effect is likely to occur; otherwise treatment may be abandoned inappropriately. One approach to minimise reddening and skin soreness is to begin with the lowest strength preparation and to apply the cream, lotion or gel sparingly and infrequently during the first week of treatment.
Application
Once daily or on alternate days could be tried for a week and then frequency of use increased to twice daily. After 2 or 3 weeks, a higher strength preparation may be introduced. If irritant effects do not improve after 1 week or are severe, use of the product should be discontinued. It is generally agreed that keratolytics such as benzoyl peroxide require a minimum of 6‑8 weeks treatment for benefit to be shown.

Sensitisation
Occasionally, sensitisation to *benzoyl peroxide* may occur. The skin becomes reddened, inflamed and sore, and treatment should be discontinued.
Bleaching
Warning should be given that *benzoyl peroxide* can bleach clothing and bedding. If it is applied at night, white sheets and pillowcases are best used and patients can be advised to wear an old T-shirt or shirt to minimise damage to good clothes. Contact between *benzoyl peroxide* and the eyes, mouth and other mucous membranes should be avoided.

Other keratolytics
Other keratolytics include *potassium hydroxyquinoline sulphate* and *salicylic acid*. They are second-line treatments.

Nicotinamide
Topical nicotinamide has a mild anti-inflammatory action and is applied twice daily. There is limited evidence of effectiveness. Side-effects may include skin dryness and/or irritation.

Antibacterials
Skin washes and soaps containing antiseptic agents such as chlorhexidine are available. Such products may be useful in acne by degreasing the skin and reducing the skin flora. There is limited evidence of effectiveness.

Topical Retinoids (Adapalene/ Differin Gel 0.1%)
1-Retinoids are highly effective in the treatment of acne, retinoids stimulate epithelial cell turnover and aid in unclogging blocked pores. Thus, the retinoid family are highly active peelers. Available topical retinoids include tretinoin, adapalene, and tazarotene. Adapalene is considered the drug of first choice because it has similar efficacy and a lower incidence of adverse effects. Differin Gel 0.1% is the first in a class of retinoids to be made available OTC for the treatment of acne vulgaris in patients 12 years of age and older.

2-The drug should be applied once daily in a thin layer on the affected areas of skin. However, if there is no improvement in 3 months of daily use, patients should stop using the product and consult a physician.
3-Adapalene is photoirritants, and sun avoidance and sunscreen use are imperative.

Practical points

Diet
There is no evidence to link diet with acne, despite a common belief that chocolate and fatty foods cause acne or make it worse.

Continuous treatment
Acne is slowly responding condition to treatment and a period of up to 6 months may be required for maximum benefit. Patients should therefore be encouraged to persevere with treatment, whether with OTC or prescription products, and told not to feel discouraged if results are not immediate. The patient also needs to understand that acne is a chronic condition and continuous treatment is needed to keep the problem under control.

Skin hygiene
Regular washing of the skin with soap and warm water or with an antibacterial soap or skin wash can be helpful as it degreases the skin and reduces the number of bacteria present.

Topical hydrocortisone and acne
The use of topical hydrocortisone is contraindicated in acne because steroids can potentiate the effects of androgenic hormones on the sebaceous glands, hence making acne worse.

Cold Sores

Cold sores (herpes labialis) are caused by one of the most common viruses affecting humans worldwide. The virus responsible is the herpes simplex virus (HSV) of which there are two major types: HSV1 and HSV2. HSV1 typically causes infection around or in the mouth, whereas HSV2 is responsible for genital herpes infection. Occasionally, however, this situation is reversed with HSV2 affecting the face and HSV1 the genital area.

Patient Assessment

Age and Duration

Cold sores are most commonly seen in adolescents and young adults. Following the primary attack, the virus is not completely eradicated and virus particles lie dormant in nerve roots until they are reactivated at a later stage. Recurrent cold sores occur in up to 25% of all adults and the frequency declines with age, although cold sores occur in patients of all ages. The incidence of cold sores is slightly higher in women than in men.

In active primary herpes infection of childhood, the typical picture is of a febrile child with a painful ulcerated mouth and enlarged lymph nodes. The herpetic lesions last for 3–6 days and the infection is resolved within 1–2 weeks.

Symptoms and appearance

The symptoms of discomfort, tingling or irritation (prodromal phase), may occur in the skin for 6–24 h before the appearance of the cold sore. The cold sore starts with the development of minute blisters on top of inflamed, red, raised skin. The blisters may be filled with white matter. They quickly break down to produce a raw area with exudation and crusting by about the fourth day after their appearance. By around 1 week later, most lesions will have healed. Cold sores are extremely painful and this is one of the critical diagnostic factors. When a cold sore occurs for the first time, it can be confused with a small patch of impetigo. Impetigo is usually more widespread, does not start with blisters and has a honey-coloured crust. Impetigo tends to spread out to form further patches and does not necessarily start close to the lips. It is less common than cold sores and tends to affect children. Since impetigo requires either topical or oral antibiotic treatment, the condition cannot be treated by the pharmacist. If there is any doubt about the cause of the symptoms, the patient should be referred.

Location

Cold sores occur most often on the lips or face. Lesions inside the mouth or affecting the eye need medical referral.

Precipitating factors

It is known that cold sores can be precipitated by sunlight, wind, fever (during infections such as colds and flu) local trauma to the skin and menstruation (hormonal changes). Physical and emotional stress can also be triggers. These information is usually helpful for the sufferer.

Previous history (help in diagnosis)

If a sore keeps on returning in the same place in a similar way, then it is likely to be a cold sore. Most sufferers experience one to three attacks each year. Cold sores occur throughout the year, with a slightly

increased incidence during the winter months. Information about the frequency and severity of the cold sore is helpful when recommending referral to the doctor, although the condition can usually be treated by the pharmacist. In patients with atopic eczema, herpes infections can be severe and widespread. Such patients must be referred to their doctor.

Medication

You need to know what medication used in previous episodes and what, if anything, helped last time. Immunocompromised patients, e.g. those undergoing cytotoxic chemotherapy, are at risk of serious infection and should always be referred to their doctor.

When to refer

Babies and young children
Failure of an established sore to resolve
Severe or worsening sore (widespread)
History of frequent cold sores
Sore lasting longer than 2 weeks
Painless sore (like in oral cancer)
Patients with atopic eczema
Eye affected
Uncertain diagnosis
Immunocompromised patient

Management

The duration of the symptoms is important as treatment with aciclovir (acyclovir) is of most value if started early in the course of the infection (during the prodromal phase). Usually the infection is resolved within 1–2 weeks. Any lesions that have persisted longer need medical referral.

Aciclovir and penciclovir

Aciclovir cream and *penciclovir creams* are antivirals that reduce time to healing and reduce pain experienced from the lesion. Treatment should be started as soon as symptoms are felt and before the lesion appears (prodromal stage). Once the lesion has appeared, evidence of effectiveness is less convincing. The treatments are therefore a helpful recommendation for patients who suffer repeated attacks and know when a cold sore is going to appear. Such patients can be told that they should use treatment as soon as they feel the characteristic tingling or itching which precedes the appearance of a cold sore.

Aciclovir *cream* can be used by adults and children and should be applied ***4-hourly*** during waking hours (approximately five times a day) to the affected area ***for 5 days***. If healing is not complete, treatment can be continued for up to 5 more days, after which medical advice should be sought if the cold sore has not resolved. ***Penciclovir*** can be used by those aged 12 years and over and is applied 2-hourly during waking hours (approximately eight times a day) for 4 days. Some patients experience a transient stinging or burning sensation after applying the creams. The affected skin may become dry and flaky.

Bland creams (e.g. cetrimide/ celavex cream)

Keeping the cold sore moist will prevent drying and cracking, which might predispose to secondary bacterial infection. For the patient who suffers only an occasional cold sore, a simple cream, perhaps containing an antiseptic agent, can help to reduce discomfort.

Hydrocolloid patch

This patch is applied as soon as symptoms start and replaced as needed. The thin hydrocolloid patch is used for its wound healing properties.

Practical point: preventing cross–infection:

1. Patient should be aware that HSV1 is contagious and transmitted by direct contact.
2. Patients should be encouraged to use a separate towel and wash their hands after applying products because viral particles are shed from the cold sore and can be transferred to others.
3. Risk of transmission is highest during the first 1–4 days of symptoms
4. Lesion should be kept clean by gently washing with it with mild soap solution.
5. For those patients in whom the sun triggers cold sores, a sun block would be the most effective prophylactic measure.

References:

1. Symptoms in the Pharmacy 8th Edition, 2018.
2. Community Pharmacy a guide to managment of minor ailements 1st Edition, 2018.