Emergency Dermatology

- These are rapidly progressive skin conditions and some are potentially life-threatening. Early recognition is important to implement prompt supportive care and therapy.
- Some are drug reactions and the offending drug should be withdrawn.
- The essential management for all dermatological emergencies, like any emergency, consists of:
  - i) full supportive care - ABC of resuscitation
  - ii) withdrawal of precipitating agents
  - iii) management of associated complications
  - iv) specific treatment (highlighted below under each condition)

Learning outcomes:

1. **Ability to recognise and describe these skin reactions:**
   - **urticaria**
   - **erythema nodosum**
   - **erythema multiforme**

2. **Ability to recognise these emergency presentations, discuss the causes, potential complications and provide first contact care in these emergencies:**
   - **anaphylaxis and angioedema**
   - **toxic epidermal necrolysis**
   - **Stevens-Johnson syndrome**
   - **acute meningococcaemia**
   - **erythroderma**
   - **eczema herpeticum**
   - **necrotising fasciitis**

Urticaria, Angioedema and Anaphylaxis

Causes

- Idiopathic, food (e.g. nuts, sesame seeds, shellfish, dairy products), drugs (e.g. penicillin, contrast media, non-steroidal anti-inflammatory drugs (NSAIDs), morphine, angiotensin-converting enzyme inhibitors (ACE-i)), insect bites, contact (e.g. latex), viral or parasitic infections, autoimmune, and hereditary (in some cases of angioedema)

Description

- **Urticaria** is due to a local increase in permeability of capillaries and small venules. A large number of inflammatory mediators (including prostaglandins, leukotrienes, and chemotactic factors) play a role but histamine derived from skin mast cells appears to be the major mediator. Local mediator release from mast cells can be induced by immunological or non-immunological mechanisms.

Presentation

- Urticaria (swelling involving the superficial dermis, raising the epidermis): itchy wheals
- Angioedema (deeper swelling involving the dermis and subcutaneous tissues): swelling of tongue and lips
- Anaphylaxis (also known as anaphylactic shock): bronchospasm, facial and laryngeal oedema, hypotension; can present initially with urticaria and angioedema

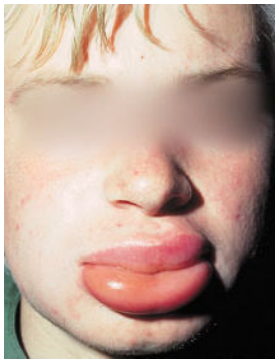
Management

- Antihistamines for urticaria
- Corticosteroids for severe acute urticaria and angioedema
- Adrenaline, corticosteroids and antihistamines for anaphylaxis

Complications

- Urticaria is normally uncomplicated
- Angioedema and anaphylaxis can lead to asphyxia, cardiac arrest and death

Urticaria



Angioedema

Erythema nodosum

Description

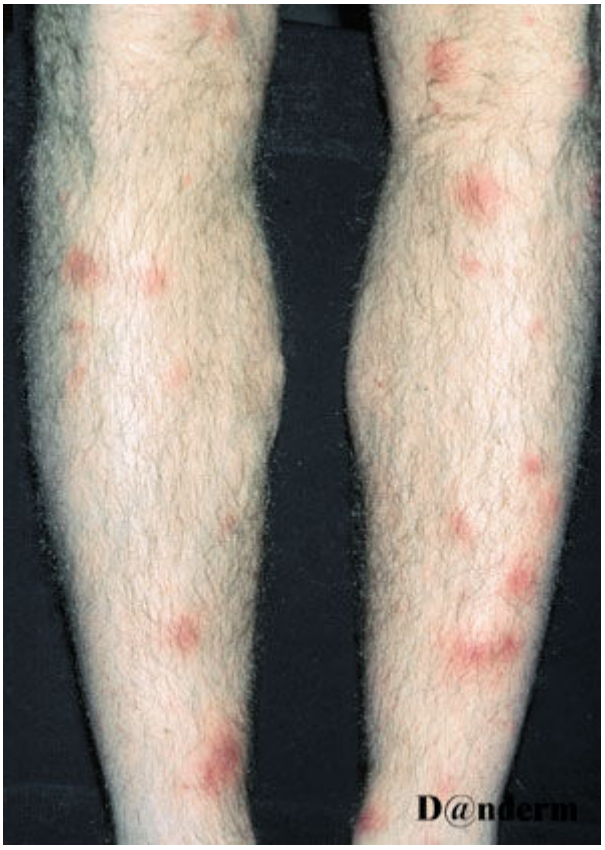
- A hypersensitivity response to a variety of stimuli

Causes

- Group A beta-haemolytic streptococcus, primary tuberculosis, pregnancy, malignancy, sarcoidosis, inflammatory bowel disease (IBD), chlamydia and leprosy

Presentation

- Discrete tender nodules which may become confluent
- Lesions continue to appear for 1-2 weeks and leave bruise-like discolouration as they resolve
- Lesions do not ulcerate and resolve without atrophy or scarring
- The shins are the most common site



Erythema nodosum

Erythema multiforme, Stevens-Johnson syndrome and Toxic epidermal necrolysis

Description

- **Erythema multiforme**, often of unknown cause, is an acute self-limiting inflammatory condition with herpes simplex virus being the main precipitating factor. Other infections and drugs are also causes. Mucosal involvement is absent or limited to only one mucosal surface.
- **Stevens-Johnson syndrome** is characterised by mucocutaneous necrosis with at least two mucosal sites involved. Skin involvement may be limited or extensive. Drugs or combinations of infections or drugs are the main associations. Epithelial necrosis with few inflammatory cells is seen on histopathology. The extensive necrosis distinguishes Stevens-Johnson syndrome from erythema multiforme. Stevens-Johnson syndrome may have features overlapping with toxic epidermal necrolysis including a prodromal illness.
- **Toxic epidermal necrosis** which is usually drug-induced, is an acute severe similar disease characterised by extensive skin and mucosal necrosis accompanied by systemic toxicity. On histopathology there is full thickness epidermal necrosis with subepidermal detachment.

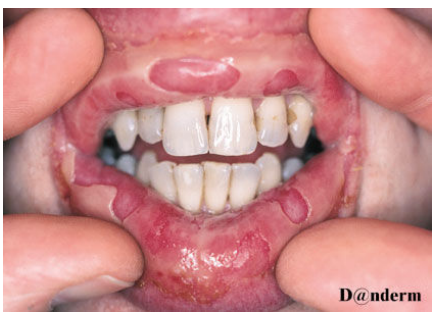
Management

- Early recognition and call for help
- Full supportive care to maintain haemodynamic equilibrium

Complications

- Mortality rates are 5-12% with SJS and >30% with TEN with death often due to sepsis, electrolyte imbalance or multi-system organ failure

Erythema multiforme



Stevens-Johnson syndrome

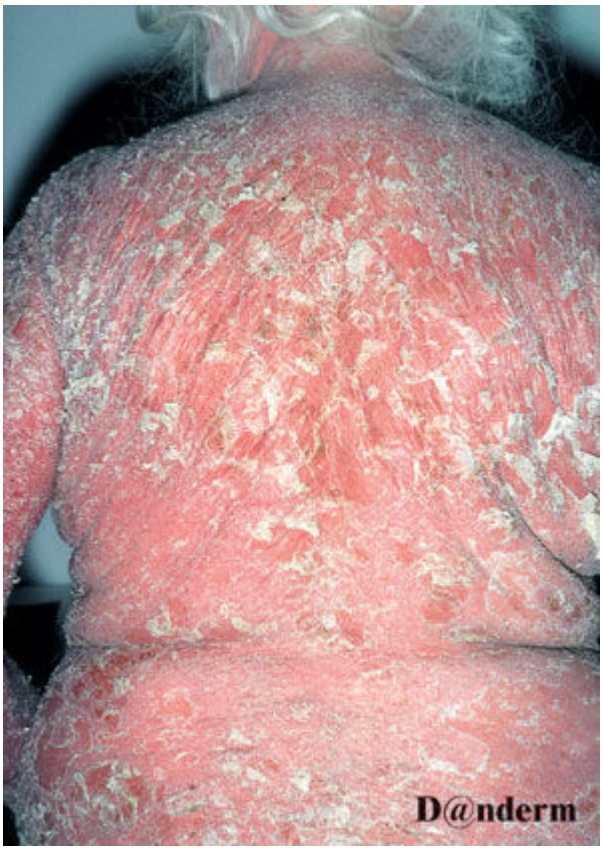
Acute meningococcaemia

Description	• A serious communicable infection transmitted via respiratory secretions; bacteria get into the circulating blood
Cause	• Gram negative diplococcus Neisseria *meningitides*
Presentation	• Features of meningitis (e.g. headache, fever, neck stiffness), septicaemia (e.g. hypotension, fever, myalgia) and a typical rash • Non-blanching purpuric rash on the trunk and extremities, which may be preceded by a blanching maculopapular rash, and can rapidly progress to ecchymoses, haemorrhagic bullae and tissue necrosis
Management	• Antibiotics (e.g. benzylpenicillin) • Prophylactic antibiotics (e.g. rifampicin) for close contacts (ideally within 14 days of exposure)
Complications	• Septicaemic shock, disseminated intravascular coagulation, multi-organ failure and death

Further reading: Hart CA, Thomson APJ. Meningococcal disease and its management in children. BMJ 2006;333:685-690 (http://www.bmj.com/cgi/content/full/333/7570/685)

Erythroderma ('red skin')

Description	• Exfoliative dermatitis involving at least 90% of the skin surface
Causes	• Previous skin disease (e.g. eczema, psoriasis), lymphoma, drugs (e.g.sulphonamides, gold, sulphonylureas, penicillin, allopurinol, captopril) and idiopathic
Presentation	• Skin appears inflamed, oedematous and scaly • Systemically unwell with lymphadenopathy and malaise
Management	• Treat the underlying cause, where known • Emollients and wet-wraps to maintain skin moisture • Topical steroids may help to relieve inflammation
Complications	• Secondary infection, fluid loss and electrolyte imbalance, hypothermia, high-output cardiac failure and capillary leak syndrome (most severe)
Prognosis	• Largely depends on the underlying cause • Overall mortality rate ranges from 20 to 40%



Erythroderma

Eczema herpeticum (Kaposi's varicelliform eruption)

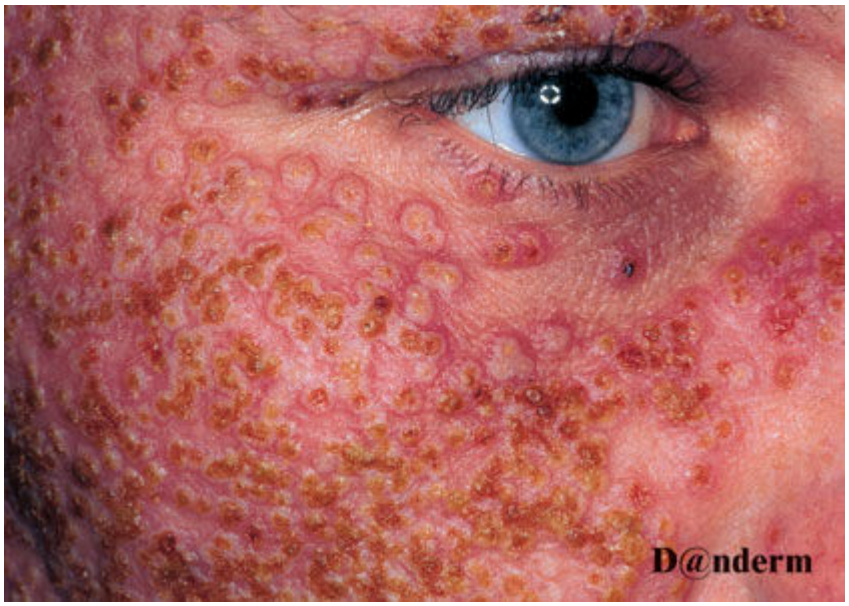
Description
- Widespread eruption - serious complication of atopic eczema or less commonly other skin conditions

Cause
- Herpes simplex virus

Presentation
- Extensive crusted papules, blisters and erosions
- Systemically unwell with fever and malaise

Management
- Antivirals (e.g. aciclovir)
- Antibiotics for bacterial secondary infection

Complications
- Herpes hepatitis, encephalitis, disseminated intravascular coagulation (DIC) and rarely, death



Eczema herpeticum

Necrotising fasciitis

Description	• A rapidly spreading infection of the deep fascia with secondary tissue necrosis
Causes	• Group A haemolytic streptococcus, or a mixture of anaerobic and aerobic bacteria • Risk factors include abdominal surgery and medical co-morbidities (e.g. diabetes, malignancy) • 50% of cases occur in previously healthy individuals
Presentation	• Severe pain • Erythematous, blistering, and necrotic skin • Systemically unwell with fever and tachycardia • Presence of crepitus (subcutaneous emphysema) • X-ray may show soft tissue gas (absence should not exclude the diagnosis)
Management	• Urgent referral for extensive surgical debridement • Intravenous antibiotics
Prognosis	• Mortality up to 76%

Further reading: Hasham S, Matteucci P, Stanley PRW, Hart NB. Necrotising fasciitis. BMJ 2005;330:830-833 (http://www.bmj.com/cgi/content/full/330/7495/830)