Urticaria (hives, ‘nettle-rash’)

Urticaria (hives, ‘nettle-rash’)

- **Is common**
- pink, itchy or ‘burning’ swellings (wheals) can occur anywhere on the body.
- Individual wheals do not last longer than 24 h, but new ones may continue to appear for days, months or even years.
- urticaria is divided into acute less than 6 weeks, and chronic forms, for more than 6 weeks.
- Most patients with chronic urticaria, other than those with an obvious physical cause, have what is often known as ‘**ordinary urticaria**’.

Causes-endogenous

Infection
- Viral (e.g. hepatitis, infectious mononucleosis, HIV infection during seroconversion)
- Bacterial
- Mycoplasma

Intestinal parasites

Connective tissue disorders

Hypereosinophilic syndrome (unexplained eosinophilia with multiple internal organ involvement, especially cardiac)

Hyperthyroidism

Cancer

Lymphomas

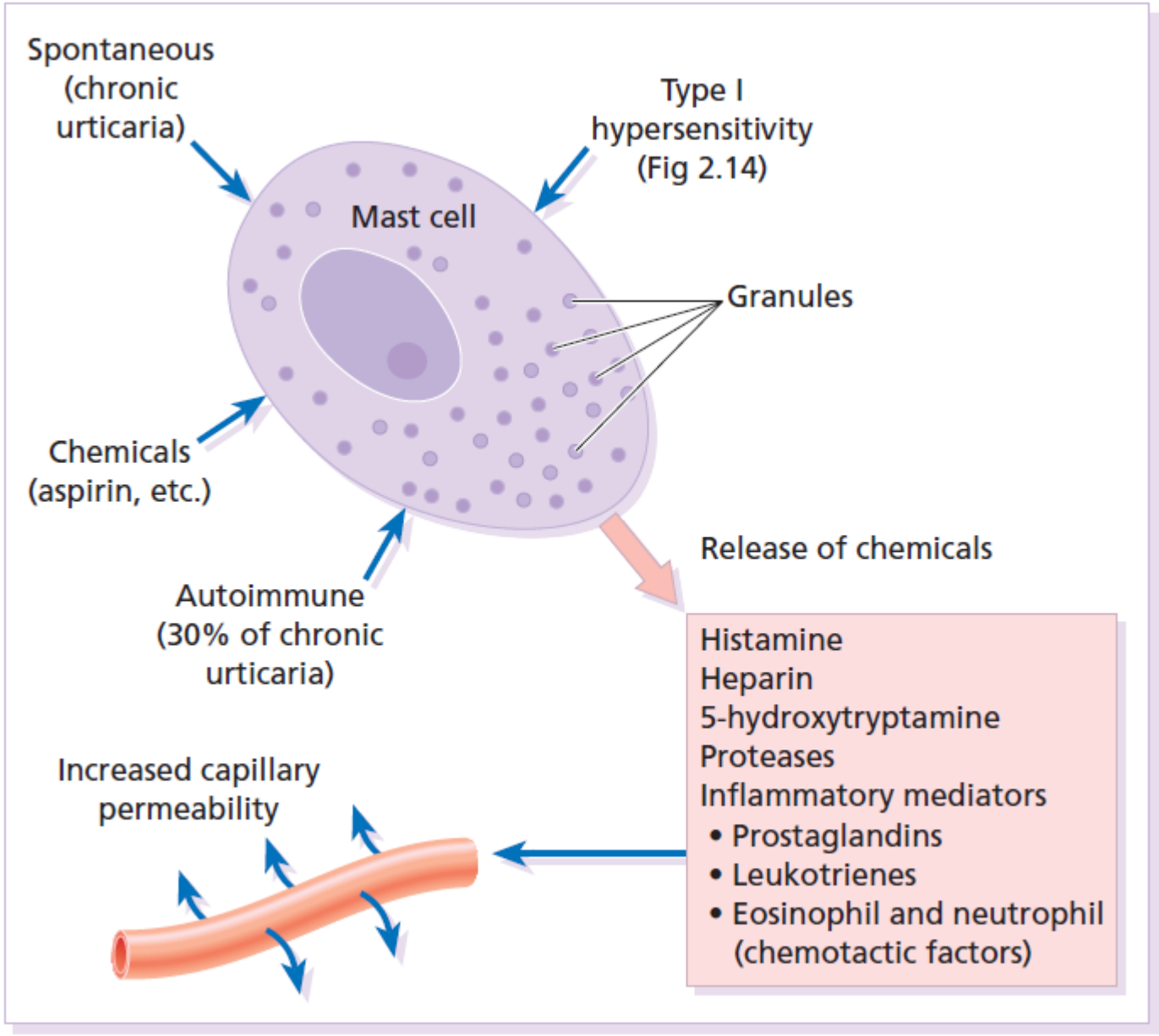
Causes, Exogenous

Drugs, both topical and systemic
Preservatives in lotions (especially sorbic acid)
Foods and food additives
Bites
Inhalants
Pollens
Insect venoms
Animal dander

Pathophysiology

- The signs and symptoms of urticaria are caused by mast cell degranulation, with release of histamine, increased capillary permeability leading to transient leakage of fluid into the surrounding tissue and development of a wheal

- Ways in which a mast cell can be degranulated and the ensuing reaction.



Classification

Table 8.1 The main types of urticaria.

Physical
cold
solar
heat
cholinergic
dermographism (immediate pressure urticaria)
delayed pressure
Hypersensitivity
Autoimmune
Pharmacological
Contact

Physical urticarias

Cold urticaria

- Patients develop wheals in areas exposed to cold (e.g. on the face when cycling or freezing in a cold wind).
- A useful test in the clinic is to reproduce the reaction by holding an ice cube, in a thin plastic bag to avoid wetting, against forearm skin.
- A few cases are associated with the presence of cryoglobulins, cold agglutinins or cryofibrinogens.

Solar urticaria

- Wheals occur within minutes of sun exposure.
- most have an IgE-mediated urticarial reaction to sunlight.
- Some patients with solar urticaria have erythropoietic protoporphyria

Heat urticaria

- In this condition wheals arise in areas after contact with hot objects or solutions.

Cholinergic urticaria

- Elicited by axiety, heat, sexual excitement or strenuous exercise
- The vessels over-react to acetylcholine liberated from sympathetic nerves in the skin.
- Transient 2–5 mm follicular macules or papules resemble a blush or viral exanthem

Aquagenic urticaria

- precipitated by contact with water, irrespective of its temperature.

Fig. 8.2 Typical small transient wheals of cholinergic urticaria – in this case triggered by exercise.

Dermographism

- This is the most common type of physical urticaria
- the skin mast cells releasing extra histamine after rubbing or scratching, the linear wheals are therefore an exaggerated triple response of Lewis.
- They can be reproduced by scratching the back with a fingernail or blunt object.

Delayed pressure urticaria

- Sustained pressure causes oedema of the underlying skin and subcutaneous tissue 3–6 h later.
- last up to 48 h
- kinins or prostaglandins, rather than histamine, probably mediate it.
- It occurs particularly on the feet after walking, on the hands after clapping and on the buttocks after sitting.

Fig. 8.3 Dermographism: a frenzy of scratching by an already dermographic individual led to this dramatic appearance.

Other types of urticaria

Hypersensitivity urticaria

- common form of urticaria is caused by hypersensitivity, often an IgE-mediated (type I) allergic reaction
- Allergens may be encountered in 10 different ways (**the 10 I's**)

Autoimmune urticaria

- Some patients with chronic urticaria have an autoimmune disease with IgG antibodies to IgE or to FcIgE receptors on mast cells, here the autoantibody acts as antigen to trigger mast cell degranulation.

Pharmacological urticaria

- This occurs when drugs cause mast cells to release histamine in a non-allergic manner (e.g. aspirin, non-steroidal anti-inflammatory drugs [NSAIDs], angiotensin-converting enzyme [ACE] inhibitors and morphine).

Table 8.2 The 10 I's of antigen encounter in hypersensitive urticaria.

Ingestion
Inhalation
Instillation
Injection
Insertion
Insect bites
Infestations
Infection
Infusion
Inunction (contact)

Contact urticaria

- The allergen is delivered to the mast cell from the skin surface rather than from the blood.
- Wheals occur most often around the mouth as foods and food additives are the most common culprits but drugs, animal saliva, caterpillars, insect repellents and plants may cause the reaction.
- Recently, latex allergy has become a significant public health concern.

Latex allergy

Possible reactions to the natural rubber latex include:

1. **contact irritant dermatitis**
2. **contact allergic dermatitis**
3. **type I allergy**, include hypersensitivity urticaria (both by contact and by inhalation), hay fever, asthma, anaphylaxis and, rarely, death.

- Cornstarch powder in medical gloves bound to the latex proteins so that the allergen became airborne when the gloves were put on.
- Individuals at increased risk of latex allergy include health care workers, those undergoing multiple surgical procedures (e.g. spina bifida patients)
- Around 1–6% of the general population is believed to be sensitized to latex.
- **Prevention** of latex allergy by **using non-latex (e.g. vinyl) gloves** should be worn by those not handling infectious material (e.g. caterers) and, if latex gloves are chosen for those handling infectious material, then powder-free low allergen ones should be used.

Presentation

Wheals

- sudden appearance of pink itchy wheals, which can come up anywhere on the skin surface
- Each lasts for less than a day, and most disappear within a few hours.
- Lesions may enlarge rapidly and some resolve centrally to take up an annular shape.
- In an acute anaphylactic reaction, wheals may cover most of the skin surface.
- in chronic urticaria only a few wheals may develop each day.

Angioedema

- is a variant of urticaria that primarily affects the subcutaneous tissues, so that the swelling is less demarcated and less red than an urticarial wheal.
- Angioedema most commonly occurs at junctions between skin and mucous membranes (e.g. peri-orbital, peri-oral and genital).
- It may be associated with swelling of the tongue and laryngeal mucosa

Fig. 8.4 A classic wheal.

Fig. 8.5 Severe and acute urticaria caused by penicillin allergy.

Fig. 8.7 A massive urticarial reaction to a wasp sting.

Fig. 8.6 Angioedema of the upper lip.

Course

- depends on its cause
- If the urticaria is allergic, it will continue until the allergen is removed, tolerated or metabolized.
- Most such patients clear up within a day or two, even if the allergen is not identified but may recur if the allergen is met again.
- only half of patients attending hospital clinics with chronic urticaria and angioedema will be clear 5 years later.
- Those with urticarial lesions alone do better, half being clear after 6 months.

Complications

- itch may be enough to interfere with sleep or daily activities and to lead to depression.
- In acute anaphylactic reactions, oedema of the larynx may lead to asphyxiation, and oedema of the tracheo-bronchial tree to asthma.

Differential diagnosis

There are two aspects to the differential diagnosis of urticaria.

- **The first** is to tell urticaria from other eruptions that are not urticaria at all.
- **The second** is to define the type of urticaria

DDX

1. **Insect bites** or stings and infestations commonly elicit urticarial responses, but these may have a central punctum and individual lesions may last longer than 24 h.
2. **Erythema multiforme** can mimic an annular urticaria.
3. **urticarial vasculitis** may resemble urticaria, but individual lesions last for longer than 24 h, blanch incompletely and may leave bruising in their wake.
4. Some **bullous diseases** (e.g. dermatitis herpetiformis, bullous pemphigoid and pemphigoid gestationis) begin as urticarial papules or plaques, but later bullae make the diagnosis obvious. In these patients, individual lesions last longer than 24 h
5. On the face, **erysipelas** can be distinguished from angioedema by its sharp margin, redder colour and accompanying pyrexia.
6. **Hereditary angioedema** must be distinguished from the angioedema accompanying urticaria as their treatments are completely different.

Investigations

- The investigations will depend on the type of urticaria.
- More is learned from the history than from the laboratory.

The history should include:

1. details of the events surrounding the onset of the eruption
2. review of systems may uncover evidence of an underlying disease
3. drugs, self-prescribed and over-the-counter medications (e.g. aspirin and herbal remedies)

- If a patient has ordinary urticaria and its cause is not obvious, investigations are often deferred until it has persisted for a few weeks or months, and are based on the history.
- Many of the physical urticarias can be reproduced by appropriate **physical tests**, but it is important to remember that antihistamines should be stopped for at least 3 days before these are undertaken.

- If no clues are found in the history, investigations can be confined to a **complete blood count** and erythrocyte sedimentation rate (**ESR**).
- An eosinophilia should lead to the exclusion of bullous and parasitic disease
- a raised ESR might suggest urticarial vasculitis or a systemic cause.
- If the urticaria continues for 2–3 months, the patient may be referred to a dermatologist for further evaluation of **internal disorders** associated with urticaria and on **external allergens**.
- Patients frequently suspect a food allergy, but this is rarely found in chronic urticaria.
- **Prick tests** are Unhelpful
- Even after extensive evaluation and environmental change, the cause cannot always be found.

Treatment

- The ideal is to **eliminate the cause**
- In addition, aspirin – in any form – should be banned.

Antihistamines

- **are the mainstays** of symptomatic treatment.
- Cetirizine 10 mg/day and loratadine 10 mg/day, both with half-lives of around 12 h, are useful. If necessary, these can be supplemented with shorter acting antihistamines (e.g. hydroxyzine 10–25 mg up to every 6 h acrivastine 8 mg three times daily) or with a longer acting antihistamine (e.g. chlorphenamine [chlorpheniramine] maleate 12 mg sustained-release tablets every 12 h)
- Chlorphenamine or diphenhydramine are often used during pregnancy because of their long record of safety, but cetirizine, loratadine and mizolastine should be avoided.
- **H2- blocking** antihistamines (e.g. cimetidine) may add a slight benefit if used in conjunction with an H1 histamine antagonist.

- **Sympathomimetic** agents can help urticaria. Pseudoephedrine (30 or 60 mg every 4 h) or terbutaline (2.5 mg every 8 h) can sometimes be useful **adjuncts**.
- A tapering course of **systemic corticosteroids** may be used, but only when the cause is known and there are no contraindications
- Low doses of **ciclosporin** may be used for particularly severe cases.

Types of urticaria and their management

Type	Treatment
Cold urticaria	Avoid cold Protective clothing Antihistamines
Solar urticaria	Avoid sun exposure Protective clothing Sunscreens and sun blocks Beta-carotene Antihistamines
Cholinergic urticaria	Avoid heat Minimize anxiety Avoid excessive exercise Anticholinergics Antihistamines Tranquillizers

Types of urticaria and their management

Dermographism	Avoid trauma Antihistamines
Hereditary angioedema	Avoid trauma Attenuated androgenic steroids as prophylaxis Tracheotomy may be necessary
Hypersensitivity urticarias	Remove cause Antihistamines (H1 + H2) Sympathomimetics Systemic steroids (rarely justified) Avoid aspirin-containing drugs

Thank u