



SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

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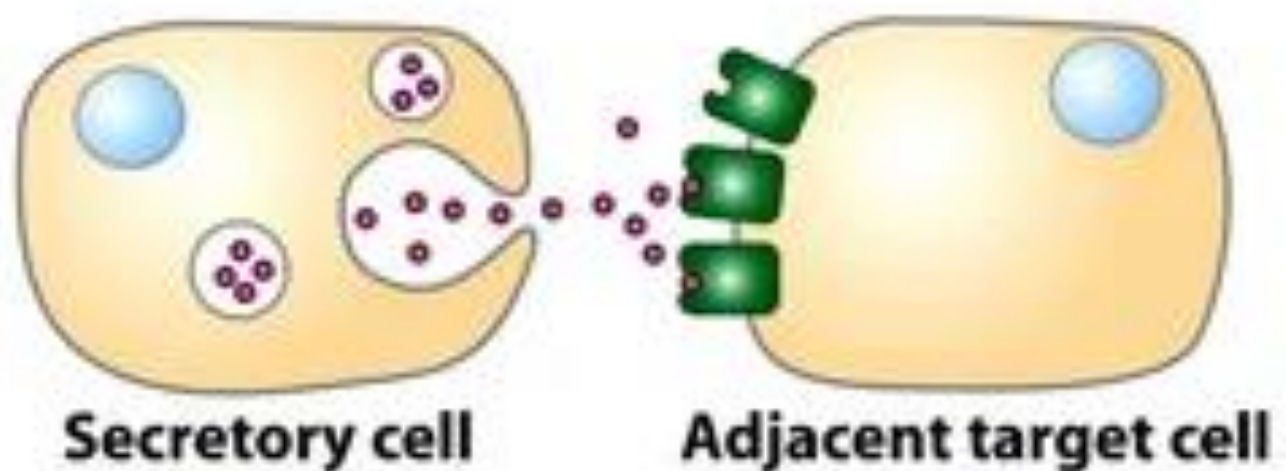
AUTACOIDS

Autacoids

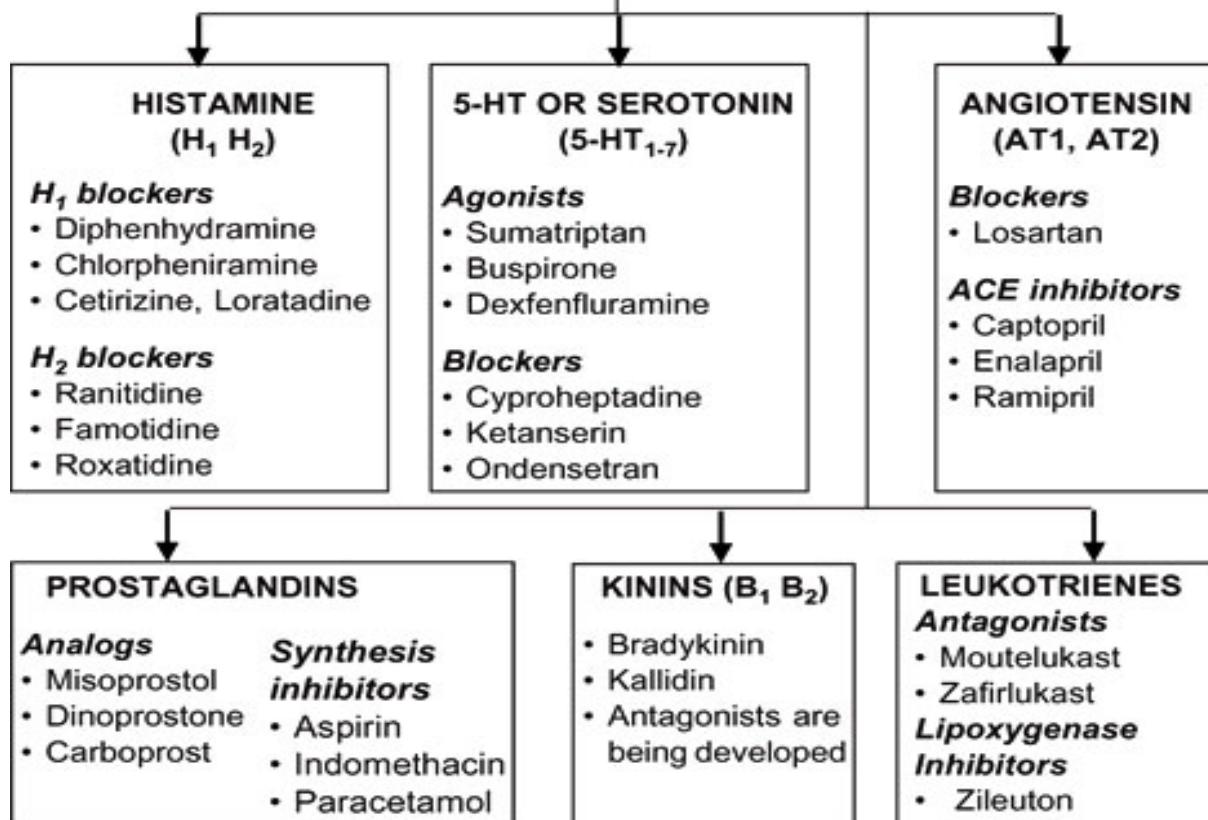
- The word autacoids comes from the Greek "Autos" (self) and "Acos" (relief, i.e. drug).
 - **Autacoids** are biological factors which act like local hormones, have a brief duration, act near the site of synthesis, and are not blood borne
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AUTACOIDS

- Autacoids have diverse physiological and pharmacological activities.
- They usually have a brief lifetime and act near their sites of synthesis.



AUTACOIDS AND THEIR ANTAGONISTS



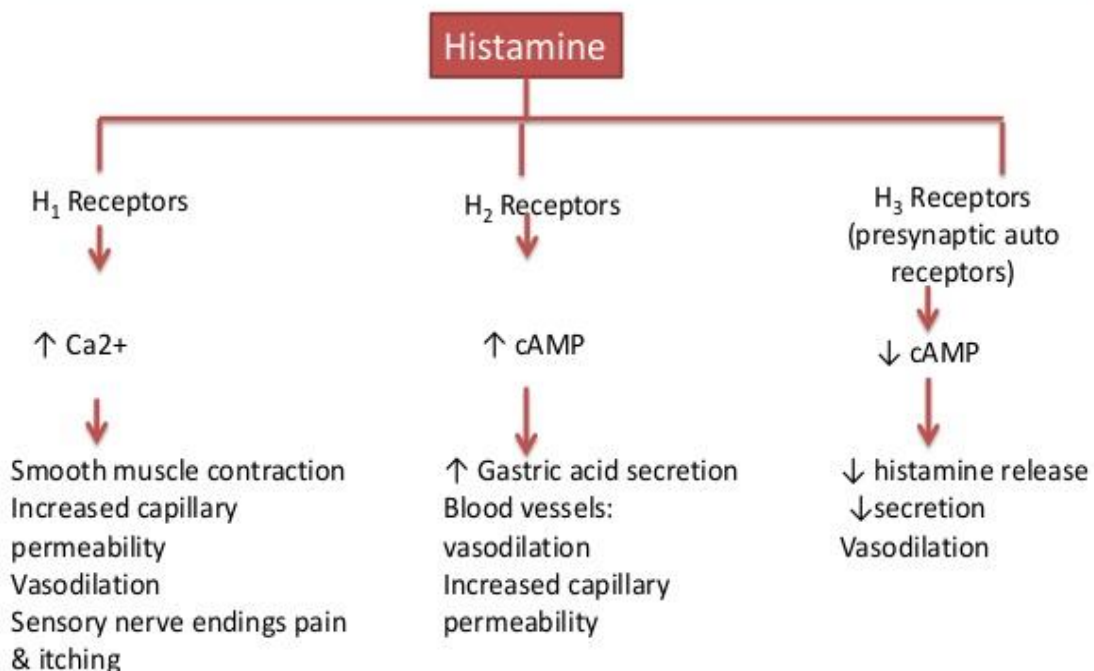
Histamine (mechanism of action)

- Histamine exerts its action by combining with specific cellular serpentine receptors located on the surface membrane (H_1 - H_4);
- In the brain, H_1 and H_2 receptors are located on **postsynaptic membranes**, while H_3 receptors are predominantly **presynaptic**

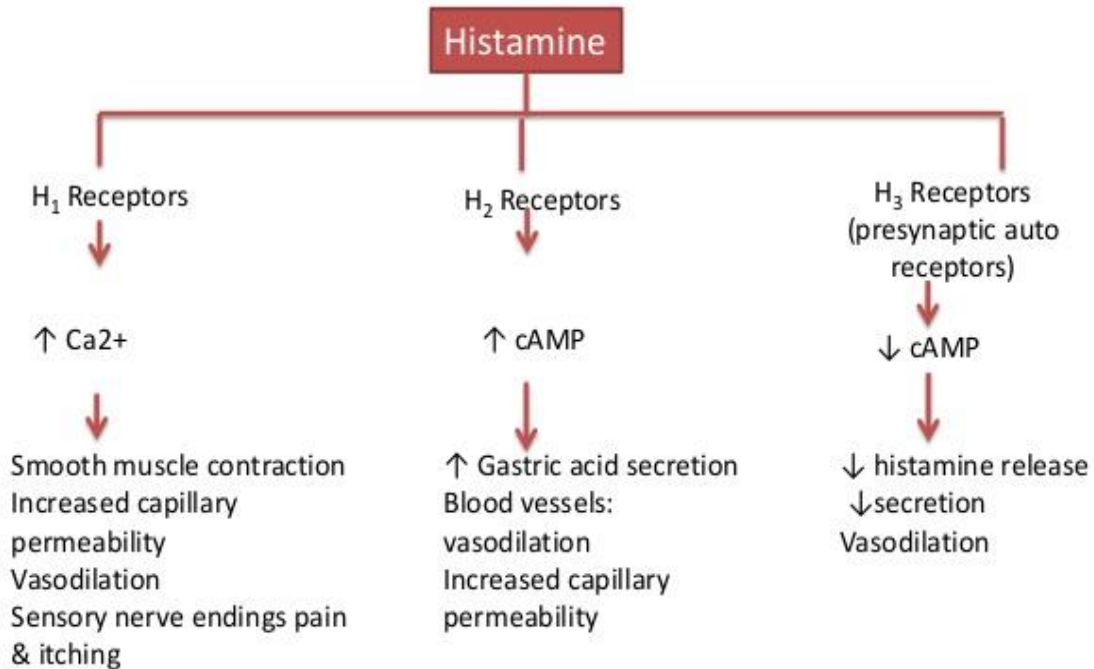
Tissue and organ system effects of Histamine

1. **Nervous system:** powerful **stimulant of sensory nerve endings**, especially those mediating **pain** and **itching**
2. **CVS:** decrease in systolic and diastolic BP (indirect vasodilation, NO) and an increase in HR
3. **Bronchiolar smooth muscle:** **bronchoconstriction** mediated by H₁ receptors
4. **GIT smooth muscle:** **contraction**, may cause diarrhea
5. **Secretory tissue:** powerful **stimulant of gastric acid secretion**
6. **The “triple response”:**

Mechanism of Action of Histamine



Mechanism of Action of Histamine



Clinical Uses of Antihistamines

- Allergic rhinitis (common cold)
- Allergic conjunctivitis (pink eye)
- Allergic dermatological conditions
- Urticaria (hives)
- Angioedema (swelling of the skin)
- Pruritus (atopic dermatitis, insect bites)
- Anaphylactic reactions (severe allergies)
- Nausea and vomiting (first generation H₁-antihistamines)
- Sedation (first generation H₁-antihistamines)

Agonists on 5-HT receptors

5-HT_{1A}

Buspirone

5-HT_{1D}

Sumatriptan
Rizatriptan
Eletriptan
Almotriptan
Zolmitriptan

5-HT₄

Metoclopramide
Domperidone

Antagonists on 5-HT receptors

5-HT_{2A}

Ergotamine
Ketanserin
Cyproheptadine
Pizotifen

5-HT₃

Ondansetron
Granisetron
Tropisetron