

A 3D model of H2 receptors, showing a large, spherical, multi-colored (purple, blue, orange) structure with a complex, woven texture, mounted on a pink, Y-shaped stalk. Several smaller, similar structures are visible in the background, all set against a yellow, textured background.

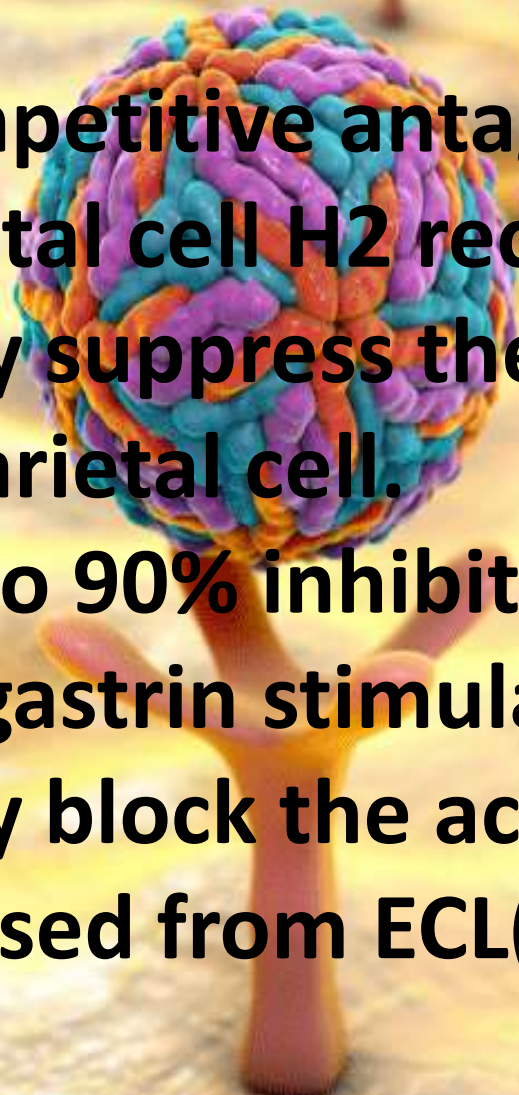
H2 Receptors

Presented by: Ifrah Hussain

INTRODUCTION

- H₂ receptor antagonists act selectively on H₂ receptors in the stomach without effecting on H₁ receptors
- They are fully reversible
- Drugs include in this class are
 - Cimetidine
 - Famotidine
 - Nizatidine
 - Ranitidine

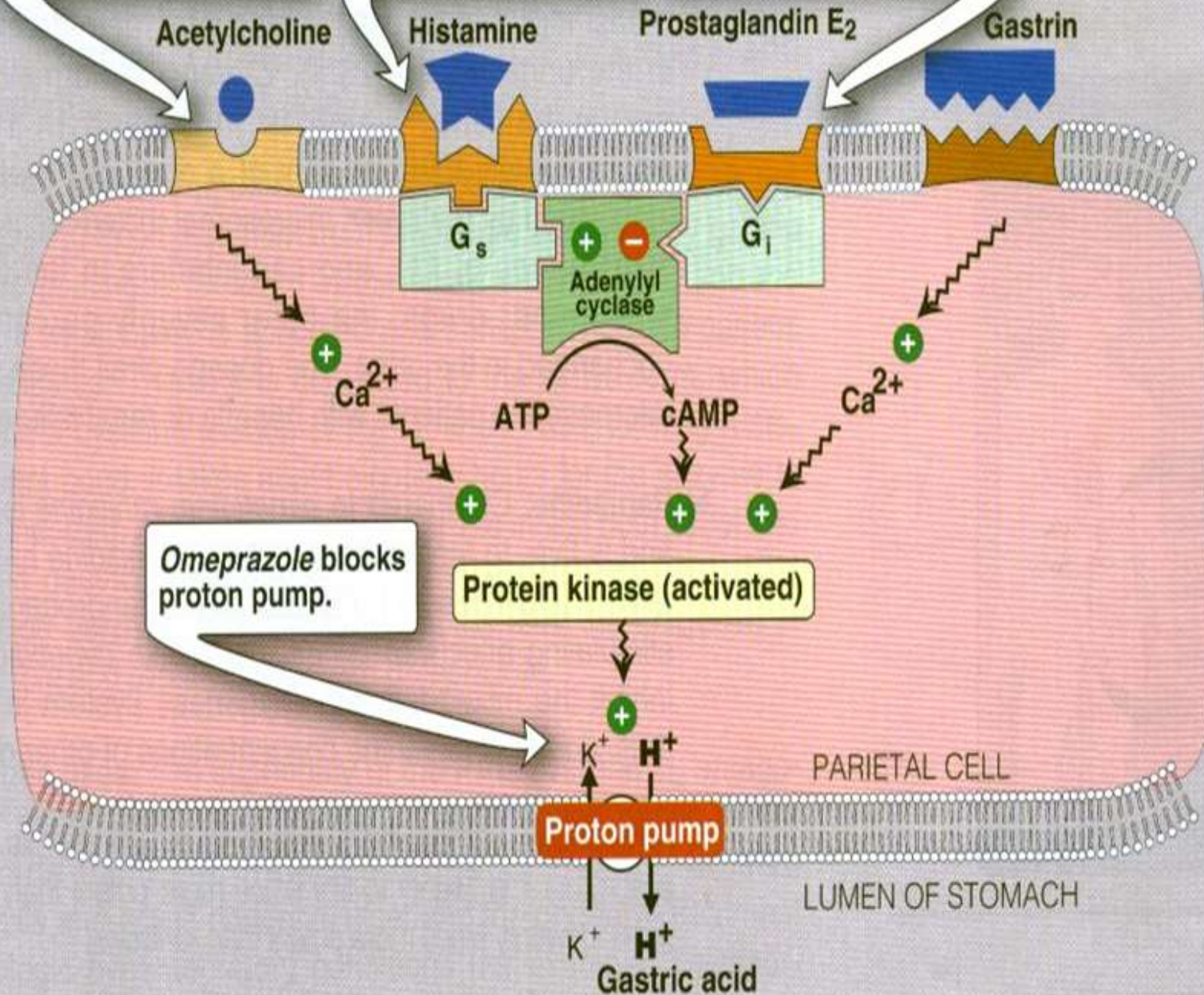
Mechanism of action

- 
- **Competitive antagonists of histamine at the parietal cell H₂ receptor**
 - **They suppress the normal secretion of acid by parietal cell.**
 - **Up to 90% inhibition of vagal stimulated and gastrin stimulated acid secretion**
 - **They block the actions of histamine released from ECL(enterocromaffin like)**

Dicyclomine blocks the cholinergic receptor.

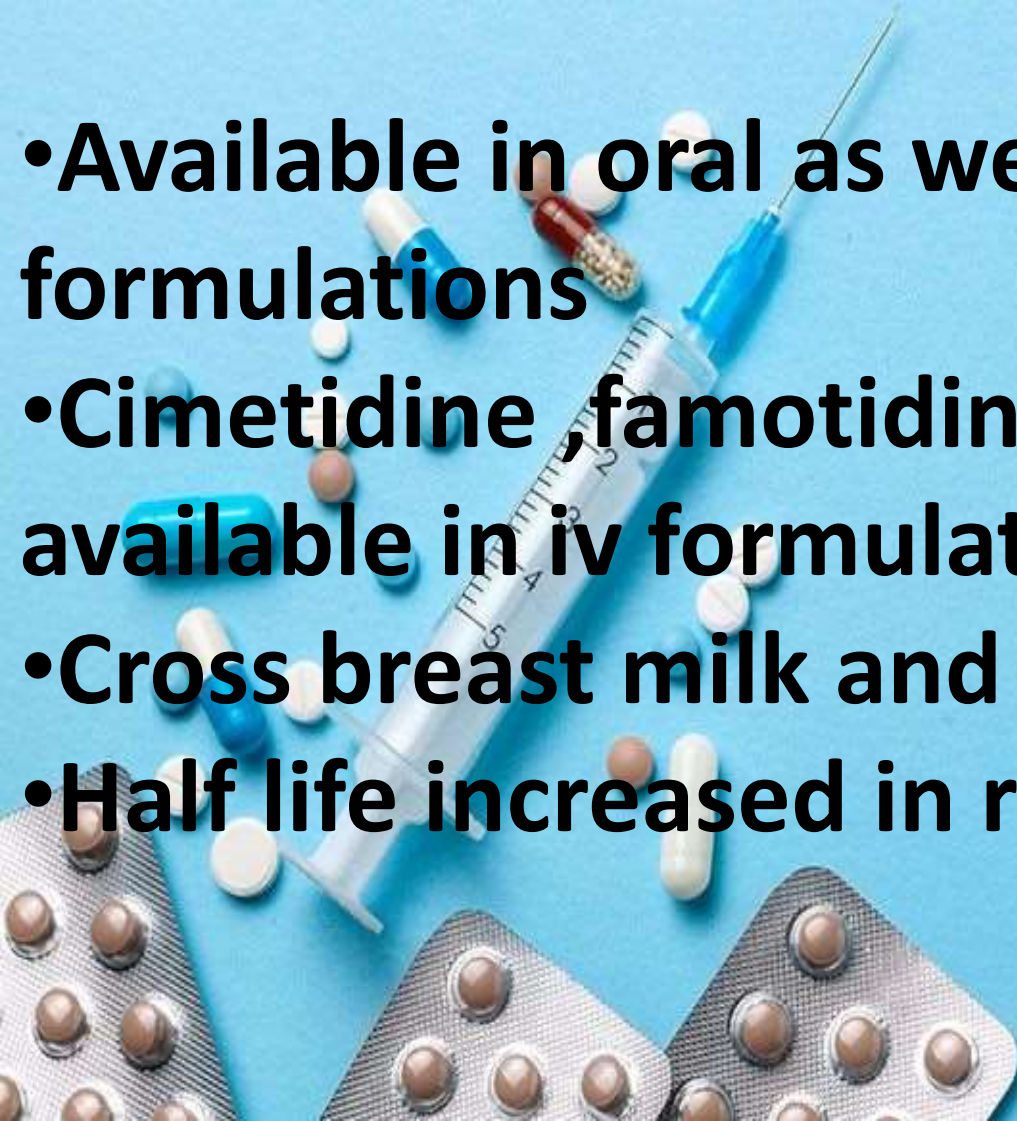
Cimetidine blocks the H_2 -histamine receptor.

Misoprostol stimulates the prostaglandin receptor.

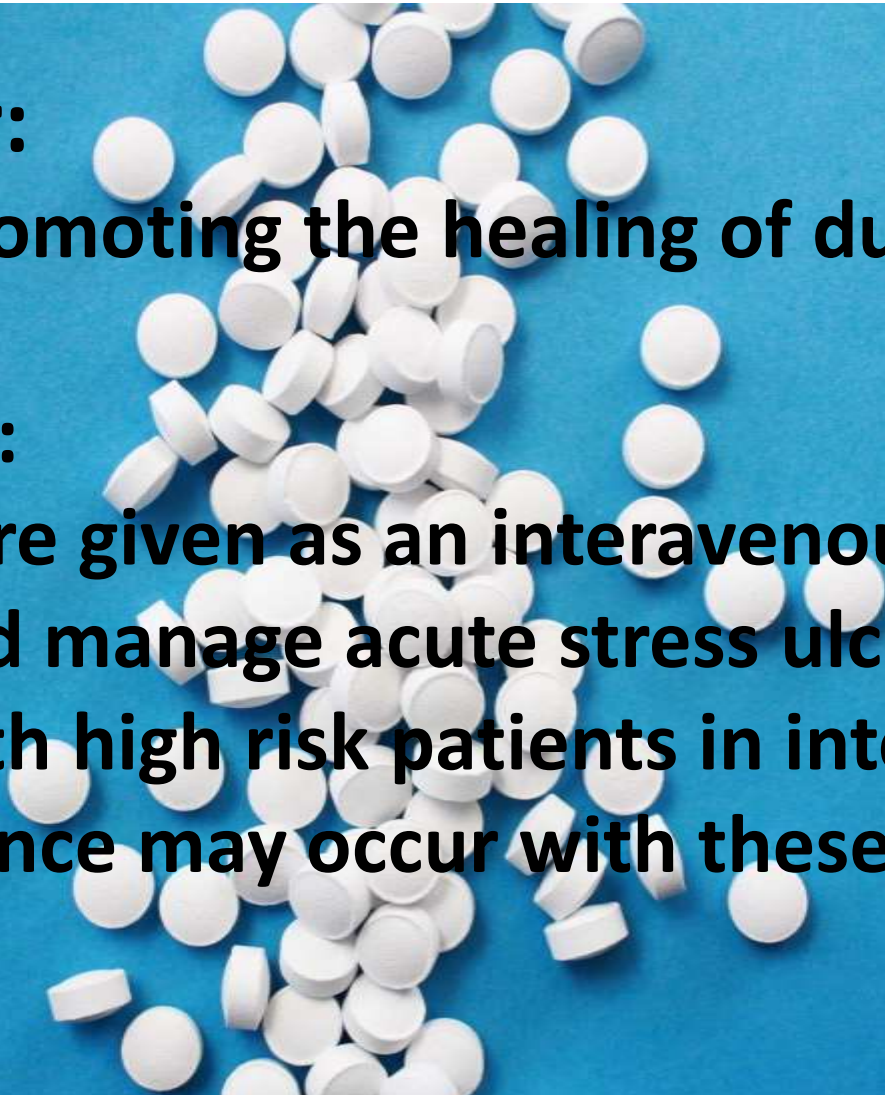


Pharmakokinetics

- Available in oral as well intravenous formulations
- Cimetidine, famotidine, ranitidine available in iv formulations
- Cross breast milk and placenta
- Half life increased in renal dysfunction

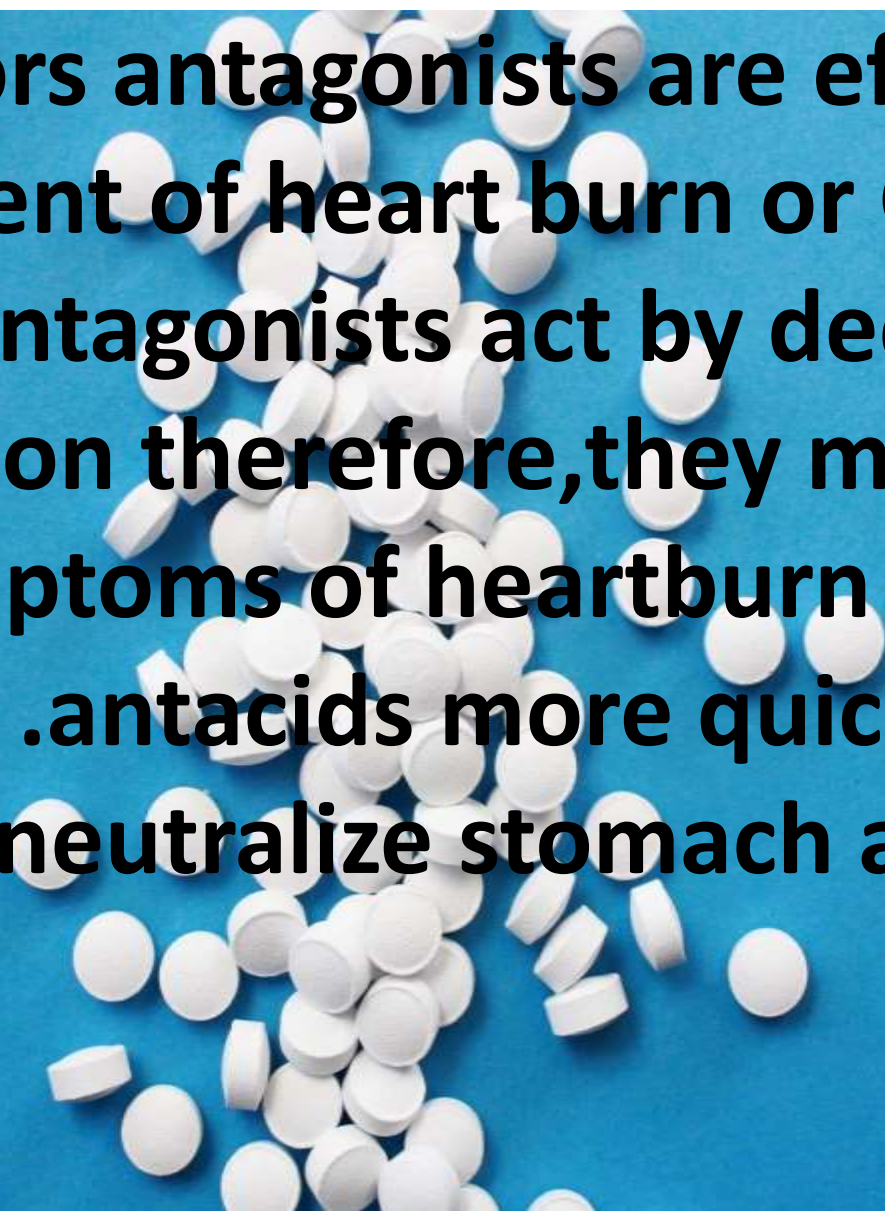


Therapeutic uses

- 
- **Peptic ulcer:**
Effective in promoting the healing of duodenal and gastric ulcers
 - **ACUTE ulcers:**
These drugs are given as an intravenous infusion to prevent and manage acute stress ulcers associated with high risk patients in intensive care setting. Tolerance may occur with these agents.

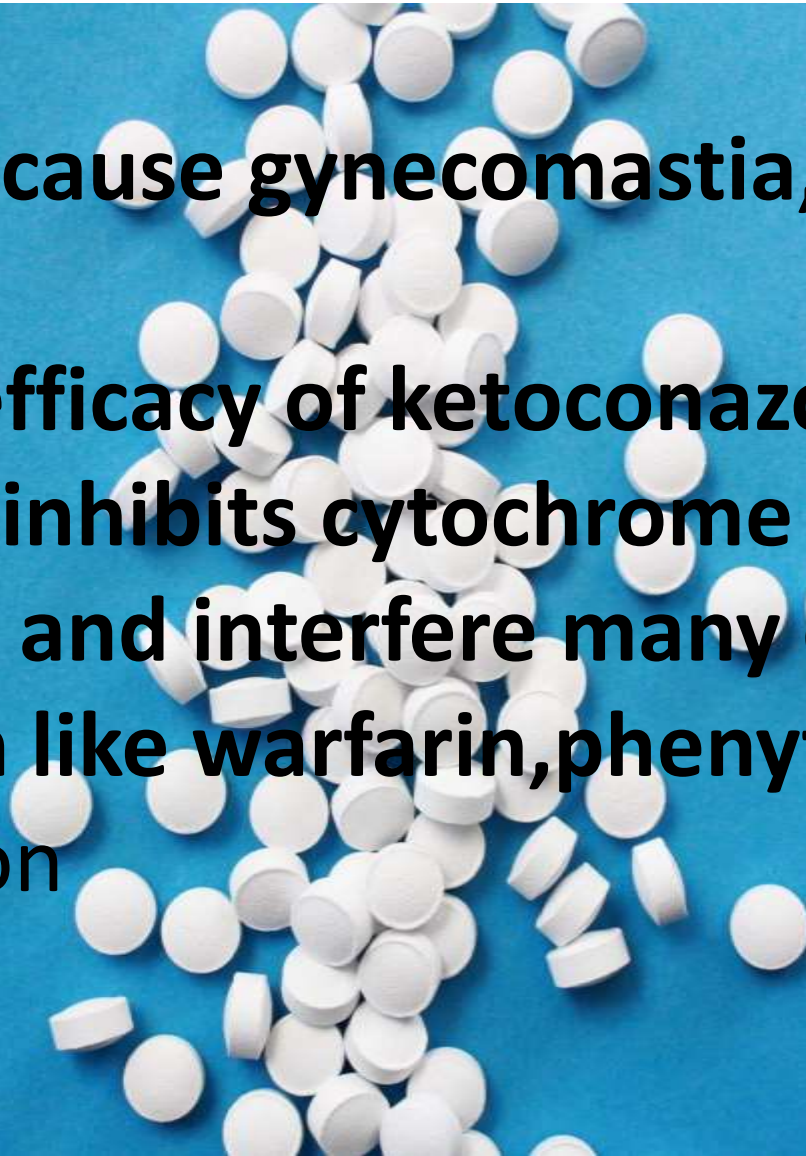
Gastroesophageal reflux disease:

H₂ Receptors antagonists are effective for the treatment of heart burn or GERD. H₂ receptors antagonists act by decreasing acid secretion therefore, they may not relieve symptoms of heartburn for up to 45 minutes. antacids more quickly and efficiently neutralize stomach acid.

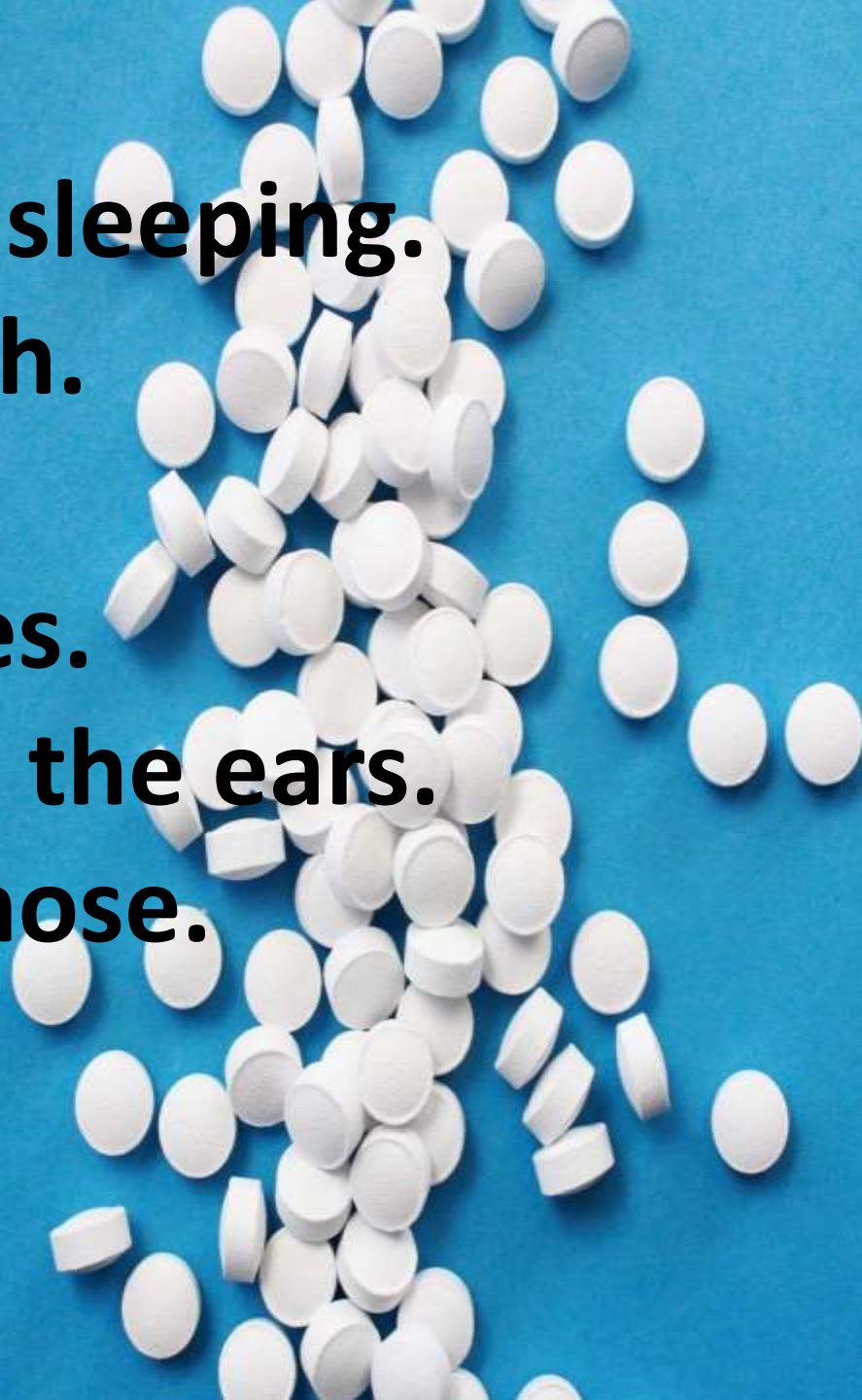
A large number of white, round tablets are scattered across a solid blue background. The tablets are of various sizes and are piled up in the center, with some lying flat and others standing on their edges. The lighting creates soft shadows, giving the tablets a three-dimensional appearance.

ADVERSE EFFECTS

- Cimetidine cause gynecomastia, galactorrhea.
- Confusion
- Decrease efficacy of ketoconazole
- Cimetidine inhibits cytochrome p450 isoenzymes and interfere many drugs metabolism like warfarin, phenytoin etc.
- Constipation
diarrhea.



- difficulty sleeping.**
- dry mouth.**
- dry skin.**
- headaches.**
- ringing in the ears.**
- A runny nose.**



Referance

- Lippincott illustrated reviews pharmacology seventh edition
- <file:///D:/pharmacology%20books/Katzung%20Basic%20&%20Clinical%20Pharmacology%20-12th%20Ed.pdf>