



DIURETIC : AN OVERVIEW

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ABSTRACT:

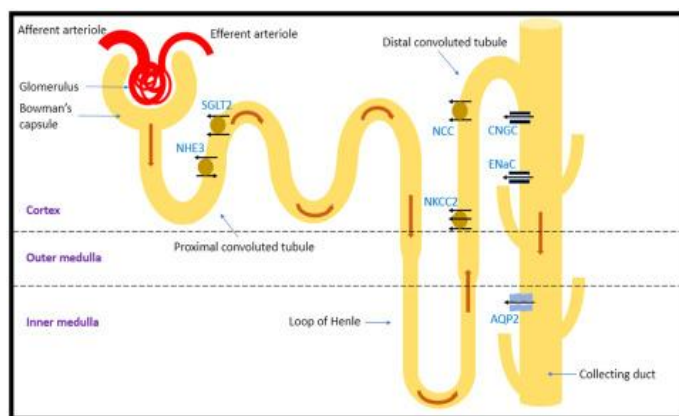
The review provides a comprehensive overview of diuretics, covering their historical development, physiological mechanisms, clinical applications, and adverse effects. This breadth of coverage should offer valuable insights for both clinicians and researchers in understanding and managing conditions where diuretics are commonly used. The inclusion of diuretic use in chronic kidney disease and the presentation of new guidelines are crucial for clinicians managing patients with renal conditions. Additionally, addressing diuretic abuse and highlighting its potential tragic consequences serves as an important reminder of the risks associated with misuse or overuse of these medications. This comprehensive approach to discussing diuretics ensures a balanced understanding of their benefits and potential harms in clinical practice.

Keywords: Diuretic, Kidney.

INTRODUCTION :

Thiazide diuretics have indeed been pivotal in the treatment of hypertension since their introduction. Despite some concerns about metabolic effects, numerous trials have reaffirmed their effectiveness and safety, making them a cornerstone of hypertension management, both as initial therapy and in combination with other drugs when needed. Given the contemporary emphasis on strict blood pressure control, diuretics are likely to remain essential in hypertension therapy. The development of diuretics stemmed from historical measures to treat dropsy, utilizing both herbal remedies with purgative or emetic properties and observations from foods prepared for the sick. By World War II, only four drugs were widely accepted for increasing urine flow, including caffeine, digitalis, mercury, and acidifying agents, each with varying effectiveness and potential risks.

Mechanism of Diuretic :



❖ Classification Of Diuretic:-

1. High ceiling Diuretic
 - A) Furosemide
 - B) Bumetanide
 - C) Torasemide
2. Medium efficacy Diuretic

A) Benzothiadiazines

•Hydrochlorothiazide

•Hydroflumethiazide

•Benzthiazide

B) Thiazide like

•Chlorthalidone

•Metolazone

•Xipamide

•Indapamide

•Clopamide

3. Weak /adjunctive Diuretic:-

A) Carbonic Anhydrase Inhibitor

•Acetazolamide

•Methazolamide

B) Osmotic Diuretic

•Mannitol

•Isosorbitol

•Glycerol

C) Potassium Sparing Diuretic

a) Aldosterone antagonists

•Spironolactone

•Eplerenone

b) Renal epithelial Na channel inhibitors

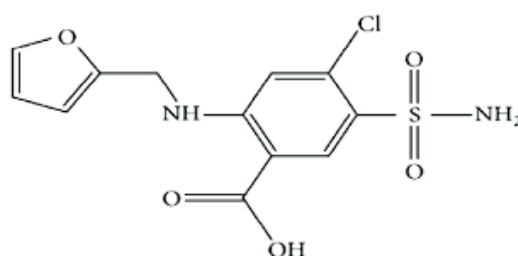
•Amiloride

•Triamterene

1.High ceiling diuretic

Furosemide

•Structure:-



Uses:-Furosemide is used to reduce extra fluid in the body (edema) caused by conditions such as heart failure, liver disease, and kidney disease

- Side effects:-

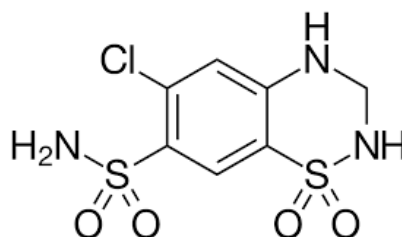
Dizziness, lightheadedness, headache, or blurred vision may occur as your body adjusts to the medication. If any of these effects last or get worse, tell your doctor or pharmacist promptly.

2.Medium efficacy Diuretic

- Benzothiadiazines

•Hydrochlorothiazide

- Structure:-



Uses:-This medication is used to treat high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.

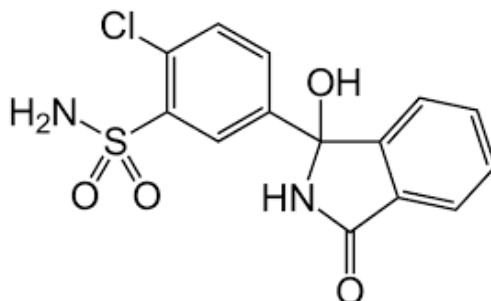
•Side effect:-

Upset stomach, dizziness, or headache may occur as your body adjusts to the medication. If any of these effects last or get worse, tell your doctor or pharmacist promptly.

B) Thiazide like

a. Chlorthalidone

• Structure:-



Uses:-Chlorthalidone is used to treat high blood pressure (hypertension). Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems. It is also used to reduce extra salt and water in the body caused by conditions such as heart failure, liver disease, and kidney disease.

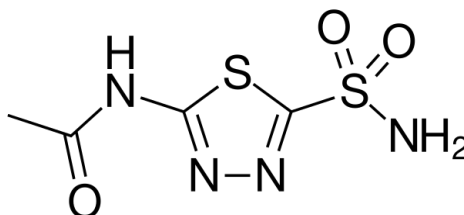
•Side effects:-

Dizziness, lightheadedness, or stomach upset may occur. If any of these effects last or get worse, tell your doctor or pharmacist promptly.

3) Weak/adjunctive Diuretic

A) Carbonic Anhydrase Inhibitor

• Structure:-



Uses:-

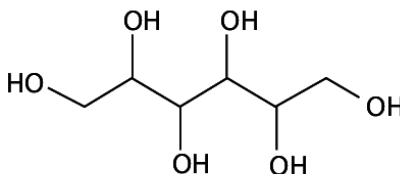
Acetazolamide is used to prevent and reduce the symptoms of altitude sickness. This medication can decrease headache, tiredness, nausea, dizziness, and shortness of breath

•Side effects:- Dizziness, lightheadedness, or increased urination may occur, especially during the first few days as your body adjusts to the medication. Blurred vision, dry mouth, drowsiness, loss of appetite, nausea, vomiting, diarrhea, or changes in taste may also occur.

B) Osmotic Diuretic

Mannitol

• Structure:-



Uses:-

Mannitol injection is used to lower pressure in the head (intracranial pressure) and increased pressure in the eye (intraocular pressure)

•Side effects:-

Swelling in your hands or lower legs, rapid weight gain;

Little or no urination;

Shortness of breath (even while lying down);

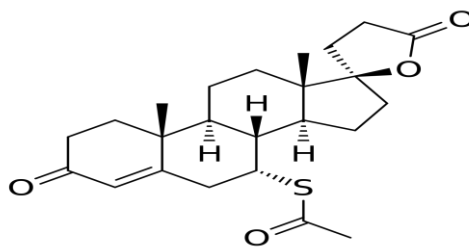
Wheezing, gasping for breath, cough with foamy mucus;

Chest pain, fast heartbeats;

C) Potassium Sparing Diuretic

Spironolactone

- Structure:-



Uses:-

This drug is used to reduce swelling from liver disease and nephrotic syndrome (a kidney problem). It's also used to treat high blood pressure, heart failure, and hyperaldosteronism (excessive secretion of the hormone aldosterone).

•Side effects:-

Nausea and vomiting

Diarrhea

Belly cramps

Leg cramps

Dizziness

Drowsiness

Headache

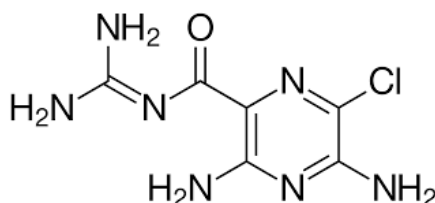
Confusion

Menstrual problems, such as irregular periods or bleeding that happens after menopause

Sexual problems, such as reduced sex drive or erectile dysfunction

b) Amiloride

- Structure:-



Uses:-

Amiloride is used with other “water pills”/diuretics (such as furosemide, thiazide diuretics like hydrochlorothiazide) to treat high blood pressure (hypertension), heart failure, or extra fluid in the body (edema)

Side effect:-

Headache, dizziness, nausea, vomiting, loss of appetite, stomach/abdominal pain, gas, or diarrhea may occur.

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