

## Diuretics in Egypt Practical situation

### SEDICO Letter

Recently, SEDICO Pharmaceuticals has taken the initiative, to hold a fundamental series of events , dealing with the most critical health subjects, one of them, was our round table discussion about (Diuretics in Egypt - Practical Situation), which was honored by the attendance of :

Prof. Dr. Mokhtar Gomaa , Prof. Dr. Usama Abdel Azim , Prof. Dr. Ashraf M. Okba, Dr. M .Abd EL Rahman EL Shayeb

SEDICO also will be committed to issue these Subjects in (News Letters) Periodically. Which will thoroughly cover the subject & will represent a brilliant tool for Knowledge to our Egyptian Health Staff, especially young doctors?

Hopping, it gains your satisfaction & credit; we will remain committed with you to achieve our Slogan ((Working for Better Health Standards))



**Dr Mokhtar Gomaa**

Do economic aspects have a role in therapy of hypertension?



**Dr Usama Abdel Azim**

What is the best diuretic to be used in hypertensive patient & why?



**Dr Ashraf M. Okba**

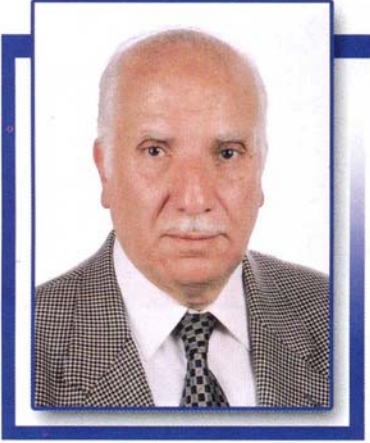
What is the practical usage of the combination between Spironolactone and Furosemide in Egypt?



**Dr M. A. Rahman EL Shayeb**

What are the Side effects and Complications of Diuretic Therapy?

## Dr. Mokhtar Gomaa



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### **For The Question (Do economic aspects have a role in drug choice for therapy of hypertension?)**

Dr. Mokhtar Gomaa said:

We have to put in our mind the economical status of our Egyptian patients, a large sector of our patients are not covered by insurance, especially patients above age of 60 of which 50 % suffer from hypertension in addition to other diseases of old age like diabetes, arthritis, dyslipidemia & C.N.S. problems. All these ailments need treatment.

In addition those old people have limited income & so cannot afford expensive drugs, therefore it is recommended to use drugs which are less expensive but in the same time effective & safe with minimal side effects.

Diuretics are recommended as the first choice for the management of hypertension by several major trials as well as recommendations of JNC6 & JNC7, as mono therapy & in conjunction with other anti hypertensive drugs if needed. Addition of spironolactone increases the diuretic's efficacy.

## Dr. Usama Abdel Azim

### **For The Question (What is the best Diuretic to be used in hypertensive patient & why?)**

Dr. Usama Abdelazim said:

Diuretics lower the blood pressure by inducing sodium and fluid loss. When used in patients with primary hypertension and relatively normal renal function, the thiazide diuretics generally have a greater antihypertensive effect than the loop diuretics (1). The mechanism is probably related to the short duration of action of the loop diuretics (less than six hours), since the initial fluid loss can be counteracted by activation of the renin-angiotensin-aldosterone system, leading to sodium retention during the period when the diuretic

effect has worn off (2). Longer-acting loop diuretics are available; torsemide, for example, has a duration of action up to 12 hours. It is not known if the antihypertensive effect of torsemide is greater than that of furosemide or bumetanide.

The above observations do not necessarily apply to patients with renal insufficiency (3). In such patients, fluid retention frequently plays a major role in the elevation in blood pressure and the thiazides become less effective when the GFR falls below 30 mL/min (4). Thus, a loop diuretic is more effective as an antihypertensive agent in these patients.

With respect to other diuretics, the potassium-sparing agents triamterene and



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amiloride have a minimal antihypertensive effect and are not widely used as initial therapy for primary hypertension. By comparison, the aldosterone antagonists spironolactone (with which there is the widest experience as monotherapy) and eplerenone are more potent antihypertensive agents (5). In view of their apparent ability to reduce cardiac and renal fibrosis, aldosterone antagonists may become much more widely used (6)

Although there has been concern about a possible increase in cardiovascular risk due to the metabolic side effects of thiazide and loop

diuretics (such as hypokalemia), combined low dose of such agents with aldosterone antagonists would avoid such side effect, potentiate diuresis and add cardiac protective action.

In case of heart failure, loop diuretics are given for fluid control and to relieve symptoms; they would not be expected to improve survival, and the risk of arrhythmic death may actually be increased if not combined with a potassium-sparing

diuretic (8).

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## Dr. Ashraf M. Okba



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### **For The Question (What is the practical usage of the combination between Spironolactone and Furosemide in Egypt ?)**

Dr. Ashraf M. Okba Said:

Diuretics is widely used in managing many medical problems common in Egypt and any where all over the world. As hypertension, heart failure, liver cirrhosis with or without liver cell failure..... etc. But these drugs although effective and important in these conditions have a lot of side effects e.g. hypokalemia, hyperuricemia, Dyslipidemia, impairment of glycemic control, hyponatremia and many other side effects

Option to combat and prevent side effects is to use drugs in small doses and in combinations. But the clever physician who can combine these drugs to get their benefits and reduce the side effects.

Spiromide is a happy combination of these diuretics as the incidence of side effects with the use of spiromide is less and at the same time it helps the patient: to be adherent to his treatment plan as it can be given once daily in one tablet in all these medical situations.

## Dr. M. Abd EL Rahman EL Shayeb



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### What are the Side effects and Complications of Diuretic Therapy?

Dr Mohamed Abd El Rahman said:

#### 1-Volume depletion

Most common complications of diuretic therapy are volume depletion and Potassium depletion.

Thiazide and Loop diuretics sometimes are associated with profound volume depletion

Diminished renal perfusion and rise of BUN and serum creatinine may occur  
Symptoms of cerebral or coronary insufficiency particularly in elderly population

#### 2 -Hypokalaemia

However a high potassium diet (oranges, apricot, Banana) is sufficient to avoid diuretic induced hypokalaemia

KCl supplementation may be necessary to avoid this complication

#### 3-Hyperkalaemia

Concomitant use of K supplements and aldosterone antagonists as well as ACE inhibitors or ARB may precipitate dangerous Hyperkalaemia

#### 4- Arrhythmias

For patients receiving Digitalis careful monitoring of K level is necessary since both hypokalaemia and hyperkalaemia are known to stimulate or exacerbate

Arrhythmias

#### 5-Hyponatraemia

Resulting from impaired H<sub>2</sub>O excretion in edema state and decreasing urinary diluting capacity

#### 6-Metabolic alkalosis

Thiazide and loop diuretics cause alkalosis predominantly due to excretion of Na, Cl, and k without HCO<sub>3</sub>

#### 7-Hyperuricaemia and Gout

Widely Reported with Thiazide or Furosemide due to enhanced reabsorption of uric acid

#### 8- Hypocalcaemia

Has been described' in conjunction with Thiazide in contrast Furosemide increases calcium excretion.

Nephrotoxicity, hypersensitivity Reactions

#### 9-Causing interstitial Nephritis

may also occur in association with Thiazide or Furosemide  
acute pancreatitis with Thiazide,  
Deafness which is irreversible is more common with loop diuretics

#### 10-Diuretic Resistance

Occur due to incomplete treatment, high salt intake or patient non compliance, volume depletion which is most common cause

#### 11-Cirrhosis and Ascites

Most feared complication is the induction of Azotemia, and precipitation of hepato-renal syndrome, altered serum k<sup>+</sup> specially Hypokalaemia may precipitate hepatic encephalopathy



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