

Telmisartan Ineffective in Hypertensive Patients With AKD

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ABSTRACT

A female patient of age 40 years admitted in general medicine with the chief complaints of headache, sweating, blurred vision and B.P was found to be 180/100 mmHg and finally diagnosed as HYPERTENSION1. Then she was prescribed with Telmisartan 40 mg. But the next day B.P was found to be 180/100 mmHg i.e. no change in the B.P. Complete blood count was done. Hemoglobin was found abnormal and all the other were normal. Serum Creatinine was found to be 2.9 mcg/dl. The patient was also diagnosed with AKD. When hypertensive patient is also having renal disease with serum creatinine above 2.5 mcg/dl, the drug Telmisartan (40 mg) will be ineffective. Then the choice of drug can be Amlodipine 10 mg.

CASE REPORT

KEYWORDS: Hypertension, Telmisartan, Amlodipine, Acute Kidney Disease.

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I. INTRODUCTION

Hypertension which is also known as high blood pressure is a long term medical condition where the blood pressure in the arteries is persistently elevated to an extent that clinical benefit is obtained from blood pressure lowering^[1].

It typically doesn't cause any symptoms. Long term exposure to hypertension causes severe cardiovascular diseases like stroke, myocardial infarction, peripheral artery disease, atrial fibrillation ^[3].

In rare and severe cases, high blood pressure causes:

- Sweating
- Anxiety
- Sleeping problems
- Difficulty in breathing
- Fatigue
- Chest pain
- Vision problems
- In hypertension cases, a person may experience headaches or nose bleeds.

Hypertension is classified as either primary hypertension and secondary hypertension.

Stages of hyper tension ^[2] :

1. Pre-hypertension-120/80 mm Hg to 139/89 mm Hg
2. Mild hypertension-140/96 mm Hg to 159/99 mm Hg
3. Moderate hypertension-160/100 mm Hg to 179/109 mm Hg
4. Severe hypertension- 180/110 mm Hg and higher.

The pathogenesis of hypertension is multi-factorial and highly complex. This disease involves the interaction of multiple organ systems and also numerous mechanisms. Factors that play an important role in pathogenesis of hypertension:-

- Genetics
- Activation of neurohormonal systems such as:
 - Sympathetic Nervous System
 - Renin-Angiotensin-Aldosterone System
- Obesity and increased dietary salt intake.

II. TELMISARTAN

Telmisartan is a nonpeptide AT1 angiotensin II receptor antagonist. This binding prevents angiotensin II from binding to the receptor thereby blocking the vasoconstriction and the aldosterone secreting effects of angiotensin II. Combination therapy may be required to achieve blood pressure goals and is initially preferred in patients at high risk i.e. stage 2 hypertension or atherosclerotic cardiovascular disease^[4].

III. CASE DISCUSSION

A female patient of age 40 years admitted in general medicine with the chief complaints of headache, sweating, blurred vision and B.P was found to be 180/100 mmHg and finally diagnosed as HYPERTENSION. Then she was prescribed with Telmisartan 40 mg. But the next day B.P was found to be 180/100 mmHg i.e. no change in the B.P. Laboratory tests were investigated in which hemoglobin was found to be 9.5 gm% and serum creatinine was found to be 2.9 mcg/dl^[5]. The patient was also diagnosed with ACUTE KIDNEY DISEASE.

As Telmisartan is ineffective in patients with serum creatinine above 2.5 mcg/dl^[6], it didn't bring any change in blood pressure. And the drug was changed to Amlodipine^[7] 10 mg which reduced blood pressure to 140/85 mmHg.

IV. CONCLUSION

When hypertensive patient is also having renal disease with serum creatinine above 2.5 mcg/dl, the drug Telmisartan (40 mg) will be ineffective. Then the choice of drug can be Amlodipine 10 mg initially which can be reduced to 5 mg followed by normalized blood pressure in order to avoid hypotensive effects.

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