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# Contemporary

## CARDIAC SNIPPET

### A CASE SERIES ON HYPERTENSION MANAGEMENT


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## CHIEF COMPLAINTS AND HISTORY OF PRESENT ILLNESS

A 40 year old male came to the clinic with complains of severe headache, weakness, difficulty in vision, and breathlessness on walking and climbing stairs for the past 3 weeks. Headache was dull with pressure across the entire head and lasted the entire day. He also had difficulty in seeing far objects with his right eye. There was no chest pain, palpations or sweating. He was taking Atenolol 100 mg/day and Chlorthalidone 25 mg 6 months ago, but now he has stopped taking them due to their side effects of erectile problems and excessive fatigue. No significant past medical history. He has a positive family history of diabetes.

## PHYSICAL EXAMINATION AND INVESTIGATIONS

Patient was alert and cooperative with no acute distress. His weight was 105 kg and his height was 163 cm. BMI = 39.5.

Pulse = 78 beats/min, regular and symmetrical in both arms. There was no radio-femoral delay. BP on three occasions was 165/105 mmHg, 155/99 mmHg and 160/100 mmHg. Heart sounds were normal. No murmurs were heard.

Abdomen: Soft and non-tender, and with no hepatosplenomegaly

Respiratory rate was 20 beats/min. Lungs were clear. No rhonchi or crepitations detected.

CNS findings were grossly intact.

### LABORATORY DATA

| TEST | RESULT | RANGE |
|---|---|---|
| Triglyceride | 240 mg/dL | < 150 mg/dL |
| FBS | 130 mg/dL | 100 to 125 mg/dL |
| HbA1c | 6.1% | 4% and 5.6% |
| ECG: Normal sinus rhythm<br>Chest X-ray: No Cardiomegaly. Lungs clear | | |

## DIAGNOSIS

Essential hypertension and prediabetes

## TREATMENT DETAILS

Patient was advised to reduce his body weight and reduce the intake of salt, sugar and caffeine in his diet. A regimen of more physical activities and proper diet control was initiated. Patient was advised to do a fasting and 2 hr pp sugar before his next visit. He was prescribed Azilsartan 80 mg once daily and asked to return in 1 month with advice to monitor his BP regularly.

## FOLLOW UP

After 1 month his blood pressure was 130/82 mmHg. His fasting and 2 hr pp sugars were within normal limits. He had lost 3 kg weight and was planning to lose a further 10 kg. He was advised to continue taking the Azilsartan which was suiting him with no adverse effects.

## DISCUSSION

Erectile dysfunction is common in men with hypertension that presents as a common adverse effect of many antihypertensive drug classes, including beta-blockers and diuretics.

In one study, at the end of the 12-week, double-blind treatment period, the mean number of episodes of satisfactory sexual intercourse per month was significantly decreased in the group receiving atenolol (from 7.0 to 3.7; $p < 0.01$) and atenolol + chlorthalidone (from 6.4 to 2.8; $p < 0.01$) even though the blood pressure and heart rate were significantly decreased.[1]

For patients with newly diagnosed hypertension, angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs) are usually the first-line therapies. Azilsartan (AZL) medoxomil was approved by the United States Food and Drug Administration in 2011 for the treatment of hypertension and has shown promising results both in blood pressure (BP) reduction and in tolerability.

Azilsartan is more efficacious in reducing blood pressure than the other ARBs with a similar safety and tolerability profile. Azilsartan's very high affinity and slow dissociation from the angiotensin receptor (AT1R) along with its inverse agonistic properties make it a good candidate for clinical effects beyond simple BP control, potentially counteracting cardiac hypertrophy, cardiac fibrosis and insulin resistance, together with improved reno-protection and atherosclerotic plaque stabilization.[2]

AZL provides statistically and clinically significant reductions in systolic blood pressure (SBP) and diastolic pressure (DBP), based on both clinic blood pressure and 24-hour ambulatory BP monitoring.[3] The prospective registry, Treatment With Azilsartan Compared to ACE Inhibitors in Antihypertensive Therapy (EARLY) compared azilsartan vs ACE inhibitors in real-world patients and concluded that in newly diagnosed hypertensive patients, AZL provides superior blood pressure control with a similar safety profile compared with ACE inhibitors.[4]

AZL doses of 40 and 80 mg/day reduce BP significantly better than maximal clinical doses of valsartan or olmesartan while being well tolerated. AZL 80mg/day lowers SBP by a greater magnitude than olmesartan or valsartan at maximally approved doses in patients with prediabetes mellitus and T2DM. These findings have important clinical implications for this high-risk patient group. These properties of AZL will lower the risk of cardiovascular disease and thereby reduce mortality rates.[5]

A 56-week, phase 3, open-label, treat-to-target study, involving 2 consecutive, non-randomized cohorts, evaluated the safety and tolerability of AZL in essential hypertension (mean baseline blood pressure 152/100 mmHg). Results demonstrated that AZL is well tolerated over the long term and provides stable BP improvements when used in a treat-to-target BP approach.[6]

A meta-analysis to determine the antihypertensive

effect of AZL versus olmesartan in patients with essential hypertension assessed 1402 patients from five trials. This meta-analysis provided the evidence that the reduction of office systolic blood pressure treated with AZL was greater than olmesartan in patients with essential hypertension.[7]

Based on pharmacokinetic and safety/tolerability study findings, no AZL dose adjustments are required based on age, sex, or race.[8] Also, based on the pharmacokinetic and tolerability findings, no dose adjustment of AZL is required for subjects with mild and moderate hepatic impairment.[9] Besides sufficient BP lowering activity, anti-hypertensive treatment with AZL may also have a favorable impact on depression in geriatric patients with uncontrolled hypertension.[10] Azilsartan shows a renoprotective effect and is well tolerated without any major adverse events.[11]

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**Azilsartan is a safe and effective treatment option for hypertension that results in good and stable BP improvement with beneficial effects in terms of renal, endothelial function, and metabolic homeostasis.**