

POOR COMPLIANCE AND WITHDRAWAL EFFECTS OF ATENOLOL IN PATIENTS WITH HYPERTENSION: A CASE REPORT

Ghazala Rafique*, Safdar Ali*, Samrina Ehsan*, Hadyat Rasool**

* Department of pharmacy, University of Sargodha, Sargodha 40100 Pakistan

** School of Pharmacy, G.C. University, Faisalabad, Pakistan

SUMMARY

Hypertension (HTN) is a chronic disease that affects approximately 50 million Americans. Many people are unconscious that they have hypertension because the disease hardly ever causes symptoms. Hence the disease is approximately nick named "The Silent Killer". Hypertension is a serious health concern for all because it is associated with renal and cardiovascular disease as well as with type II diabetes mellitus. Hypertension affects all ethnic groups, but African-Americans suffer disproportionately from hypertension and its effects, leading to high rates of cardiovascular morbidity and mortality. Hypertension at an earlier age is more severe, and result in organ damage i.e. coronary heart disease, stroke, and end stage renal disease. Hypertension actually is an elevation in systolic and/or diastolic blood pressure. It classified as primary / essential / idiopathic when there is no identifiable cause for increased BP and secondary HTN when there is an identifiable cause for increased BP. HTN may be medication induced for example by oral contraceptives, steroids, TCAs, NSAIDs, cyclosporine.

Keywords: hypertension, NSAIDs, TCAs, idiopathic

Correspondence Address: Ghazala Rafique, Department of pharmacy, University of Sargodha Sargodha 40100 Pakistan E-mail: walidf7@gmail.com

INTRODUCTION

Elevated BP affects both the function and the structure of blood vessels. It is a common health problem with sometimes devastating consequences and often remains asymptomatic until late in its course (1). It is one of the most important risk factors in coronary heart disease, cerebrovascular accidents, cardiac hypertrophy and heart failure. Environmental factors for example stress, obesity, smoking, physical inactivity, and heavy consumption of salts can modify the expression of genes causing hypertension (2). HPN is classified as primary / essential / idiopathic when there is no identifiable cause for increased BP or secondary HTN when there is an identifiable cause for increased BP. 90-95% cases were diagnosed as essential hypertension (3). HTN may be medication induced for example by oral contraceptives, steroids, TCAs, NSAIDs, cyclosporine (4).

CNS and ANS play key role in regulating BP. Centrally located beta receptor stimulate the release of nor epinephrine whereas α_2 receptors inhibit nor epinephrine release, which produces vasodilation thus reduces BP. Receptors located in periphery also regulate BP. Baroreceptors located in large arteries play a significant role in regulating BP.(1,3,4,6)

CASE REPORT

A 65 years old woman, Mrs. WS was admitted to DHQ Hospital Sargodha with complaints of headache and numbness. She was in usual state of health when she diagnosed increased BP, numbness of half body, dizziness and chest discomfort. Her past medical history shows that she has HTN for two years and heart attack (MI) one year ago. She has no family history of Diabetes Mellitus, HTN and Asthma. Social history shows that she was non-smoker and non alcoholic with normal appetite. Examination of her CNS reveals that sensory and motor systems are normal and CNS is intact. Some days before the BP of Mrs. WS was raised fiercely. She was admitted in DHQ Hospital, Sargodha for five days. After spending 15 days at home normally, she again admitted for her increased BP. The blood test shows that the triglycerides level is high i.e. 175 mg/dl (normal value 50 to 150 mg/dl). The level of VLDL is 35 mg/dl (normal 0 to 25mg/dl). VLDL is major carrier of endogenous triglycerides. The final product of metabolism of VLDL is LDL, which contain 60-75% of cholesterol. Increased level of LDL cholesterol is directly related the probability of development of atherosclerosis. So LDL is referred as "bad cholesterol". She was prescribed Tenormine (Atenolol) Tab. Capoten (Captopril) Tab Lipiget (Atorvastaton) Tab. Clopidogril 75 mg, Tab. Disprin CV, Tab. Nootropil (Piracetam) and Dexa-N (Neomycin Sulphate 0.5 %, Dexamethasone 0.1%). She was recommended to continue Tenormine (Atenolol) Tab. Capoten (Captopril) Tab Lipiget (Atorvastaton) and Tab. Tab. Disprin CV when discharged. All of her cardiovascular symptoms were then well controlled by this therapy plan.

CONCLUSION

When we study this case it was revealed that BP of the patient is uncontrolled but she has no family history oh HTN. She was admitted to hospital twice for her uncontrolled BP. After some questioning it was find out that the patient compliance to the medication was not good. When she is normal she do not consider it necessary to take the medication, which then result in unusually high BP. She occasionally uses to take high doses if she missed the previous dose. This result in high dose of Atenolol. Atenolol is a cardio selective B-blocker. When high dose of Atenolol is taken cardio selectivity loses and the drug also acts on the lungs, Due to which the patient feel respiratory syndromes (5).

Past medical history of patient also show that she suffer from MI (heart attack). One reason for this is abrupt discontinuation of Atenolol. Because the dose of B-blocker should be tapered gradually over 14 days to prevent with drawl symptoms such as MI. Captopril, An ACEI, is also suggested to patient for its antihypertension effect. It is responsible for blocking the convert of Angiotensin I to Angiotensin-II, which is a potent vasoconstrictor (8). ACIE also inhibit the degradation of Bradykinin and increase the synthesis of vasodilating PG (9). Their one of side effect is dizziness which the patient is experiences although her CNS is normal and intact. Piracetam 400 mg is suggested for her head related problems, but in reality it is not much needed for the patient.

The main reason for uncontrolled BP is poor patient compliance and do not follow the dietary plan properly because her fiber in take was very low. Poor patient compliance further leads to much complication and it was very clearly told to patient. (1,5,7)

REFERENCES

1. **Joel G. Hardman, Limbird L.E., Gillman G.A., (2001).** Goodman & Gilman's the pharmacological basis of therapeutics. 10th Edition 2001. The McGraw-Hill Companies. New York, USA.

2. **Marie A. Chisholm-Burns, Barbara G.Wells, Terry L. Schwinghammer, Patrick M. Malone, Jill M. Kolesar, John C. Rotschafer, Joseph T. Dipiro, (2007)**, New Pharmacotherapy Principles & Practice, The McGraw-Hill Companies, Inc., New York USA
3. **Richard D. Howland, Mycek J.M., Harvey R.A., Champe P.C. (2006)**. Lippincott's Illustrated reviews: Pharmacology. 3rd Edition (2006). 351 West Camden Street Baltimore,MD 21201. p 395- 40
4. **Virginia Poole Arcangelo, Andrew M. Peterson, (2006)** Pharmacotherapeutics for advanced practice, practical approach, second edition, Lippincott William and Wilkins, 197-211,213-224.
5. **Andreoli Cecil (2007)** Cecil Essential of Medicines; Cardiovascular Diseases, 6th Edition, Elsevier Philadelphia, USA
6. **Mary Anna Koda Kimble, (2004**
7.) Applied Therapeutics, The clinical use of drugs, 8th edition, Elsevier Philadelphia, USA
8. **Vinay Kumar, Ramzi S. Cotran, Stanley L. Robbins (2007)** Robbins Basic Pathology, 7th Edition .Saunders (An imprint of Elsevier science), Elsevier Philadelphia, USA 338-341
9. **Leon Shargel, Mutnick H.A., Souney F.P., Swanson N.L., (2004)**. Comprehensive Pharmacy Review. 4th Ed. (2004). 351 West Camden Street, Baltimore, MD 21201
10. **Stephen J. Mcphee. Maxine A.(2007)**, Current Medical Diagnosis and Treatment, 46th Annual Volume, McGraw Hill Companies Inc. California USA
11. **Papadakis, Lawrence M. Tierney Jr. (2006)**, Current Medical Diagnosis and Treatment, 46th Edition, McGraw Hill Companies Inc. California USA
12. **Bertram G. Katzung (2004)**. Basic & Clinical Pharmacology, 9th Edition, The McGraw Hill companies, New York, USA p 782-790.