A Prescription Pattern Study of Antihypertensive Drugs in an Indian Referral Hospital

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Hypertension is a leading contributor to the global burden of disease and it continues its upward growth trend.[1]Hypertension is the most important modifiable risk factor for coronary heart disease, stroke, congestive heart failure, end-stage renal disease and peripheral vascular disease. Therefore, medications for hypertension need to be taken for the entire life and factors like efficacy, side effects, drug interactions and cost of therapy need to be taken into consideration.[1&2]

The study was undertaken to assess the prescription pattern of newly diagnosed cases of hypertensive patients presenting to GSL Medical College and Hospital located in state of Andhra Pradesh in the southern part of India. The study was carried out at the hospital pharmacy. Permission to conduct the study was taken from the Institutional Ethics Committee. Before collecting the prescriptions, an informed verbal consent was taken from the patients. Data was analyzed using SPSS version 10. The brand names of drugs in prescriptions were decoded to generic names of drugs using standard CIMS India Drug Manual.

Antihypertensive drugs were categorized into six major categories such as angiotensin-converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), beta-blockers, calcium channel blockers (CCBs), diuretics and others (all other antihypertensive classes including alpha-blockers).[3]

A total of 224 antihypertensive prescriptions (newly diagnosed hypertension) were collected & analyzed from 1st November 2007 to 31st December 2007.A total of 367 drugs were prescribed over the period of two months (1.63 drugs in each antihypertensive prescription). 137 prescriptions (61.16%) were of hypertension alone and the other 87 prescriptions (38.84%) had existing or newly diagnosed co-morbid diseases like diabetes mellitus, ischemic heart disease and renal problems along with newly diagnosed hypertension. A total of 199 prescriptions were for mild to moderate hypertensive cases (stage 1 hypertension) & 25 prescriptions were for severe hypertensive cases (stage 2 hypertension) at diagnosis.[3]

The most frequently prescribed antihypertensive regimens, ranked in the order of prescribing frequency, were as follows: calcium channel blockers (22.6%), cardio selective beta-blockers (20.7%), angiotensin-converting enzyme inhibitors (20.4%), diuretics (12.5%), others including alpha blockers (10.5%), calcium channel blockers + angiotensin-converting enzyme inhibitors (5.8%), angiotensin receptor blockers (4.2%), calcium channel blockers + angiotensin receptor blockers + alpha blocker (2.6%) and beta-blockers + diuretics (0.7%).

A total of 84 antihypertensive prescriptions (37.5%) were from the people in the age group of 25 to 40 years. In this category, a total of 73 (86.9%)

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prescriptions were for mild hypertension, 6 prescriptions (7.1%) for moderate hypertension and 5 prescriptions (6.0%) for severe hypertension. Mild to moderate hypertension was treated mostly with single drug like amlodipine (CCB), atenolol (Beta blocker) or ramipril / enalapril (ACE inhibitors) and severe hypertension needed combination of antihypertensive drugs as stated above.

A total of 140 (62.5%) antihypertensive prescriptions were from the people above the age of 40 years, of which 122 had mild to moderate hypertension and 18 had severe hypertension. Mild to moderate hypertension prescriptions had single or maximum 2 drugs for treatment of hypertension (calcium channel blocker with angiotensin converting enzyme inhibitor being the commonest combination in prescription). Severe hypertension prescriptions had mostly triple drug regimen which mostly included alpha blocker as third drug for adequate control of hypertension. Out of the 140 antihypertensive prescriptions of people above the age of 40 years, 83 prescriptions (59.83%) had drugs for one or more co morbid diseases along with hypertension (type 2 diabetes mellitus and ischemic heart disease being the commonest).

The study concludes that whether in mono-therapies or overall treatment, CCBs were the most commonly prescribed drugs, followed by beta-blockers and angiotensin enzyme inhibitor drugs. The study provides baseline data for carrying out further therapeutic audit with more parameters of analysis which in turn will provide regular feedback to researchers and prescribers. This may encourage rational prescribing in hypertension.

References

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