Atorvastatin: Drug Use Evaluation

Nora AlBanyan, R.Ph., SSC, PhP; Ihab AlMadhoun, Pharm.D; Maya Mroueh,Pharm D; Fahad AlOtaibi, R.Ph., Msc

Background

Statins reduce the risk of death, myocardial infarction, and stroke in patients with coronary heart disease and others at high cardiovascular risk. Currently, Atorvastatin is one of the top five highly cost medications at King Fahd Medical City (KFMC); therefore, a DUE was conducted to assure the adherence of The National Cholesterol Education Program guideline recommendations.

Justification for DUE:
•High cost medication.
•High prevalence disease state.

Objectives

•Assure the adherence of The National Cholesterol Education Program guideline recommendations.
•Monitor proper Atorvastatin utilization.

Methods

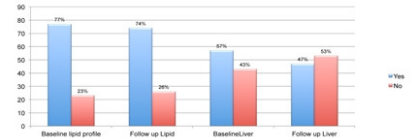
A retrospective chart review analysis was conducted between May and June 2010 for a total of 107 patients on Atorvastatin therapy.
Inclusion Criteria: Patients received Atorvastatin during the study period.
Exclusion Criteria: Patients received Atorvastatin before or after the study period.

Results

Total of 107 patients were evaluated, of those 41% were male and 59% female.
Our data showed that Baseline lipid profile was not obtained in 24 (23%)[95% CI (15.8%, 32.5%)]of patients and baseline liver profile in 43 % of them. Smoking and Family history of coronary heart disease was not documented for 71 (66%) and 76 (71%) patients respectively.

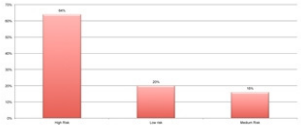
Risk factors of Hyperlipedimia: (Table 1)

	Smoking %	Age (men >45 years; women >55 years) %	Hypertension %	Low HDL cholesterol (<40 mg/dL) %	Family history %	DM%
Yes	15	58	68	36	7	64
No	19	42	32	58	22	36
Missing	66	0	0	0	71	0



Risk assessment
Patients with clinically evident atherosclerosis (i.e. CAD, peripheral vascular disease or carotid vascular disease including ischemic stroke) are categorized as being at very high risk for a cardiovascular event, similarly diabetics (fasting blood glucose level of 7.0 mmol/L or greater) who are over the age of 30. For patients without clinical evidence of cardiovascular disease or diabetes, it is recommended to calculate their risk level using the Framingham risk score.

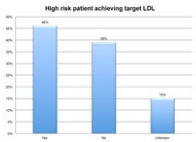
There are other predisposing risk factors that will contribute directly or indirectly to a high CAD risk for example a High density Lipoprotein level lower than 40 mg/dL will increase CAD risk. A family history of CAD in any first-degree relative and cigarette smoking are also considered as major risk factors.



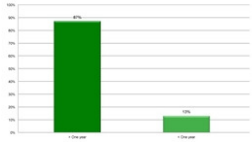
Target lipid levels
Determine target lipid levels according to the patient's level of risk.

Risk category	LDL-cholesterol goal
Coronary heart disease (CHD) or CHD risk equivalent (10-year risk >20 percent)	<100 mg/dL (2.58 mmol/L); optional goal <70 mg/dL (1.82 mmol/L) in very high risk
2 or more risk factors (10-year risk ≤20 percent)Δ	≤130 mg/dL (3.36 mmol/L)
0 to 1 risk factor	≤160 mg/dL (4.13 mmol/L)

Only 55 [52%, (42.5%, 62.1%)] of the patients had their LDL cholesterol controlled sufficiently within the target based on recommended guidelines; while, 26 % of them did not reach the target and 22 % had no lab results despite being on Atorvastatin therapy. Of the total 68 (64%) who were at high risk, 37 [54% (41.9%, 66.5%)] of them did not achieve the target level of LDL.



57 % of the patients received Atorvastatin for more than two years, 30 % for two years, and 13 % for less than one year.



Conclusion

Our data suggested poor documentation of risk factors in patients' files. Moreover, we discovered that a high proportion of the higher risk patients did not achieve the target level of LDL. This finding was shown as an adherence to the recommended target guideline in only 52% of patients. In addition, dosing adjustments and the use of other anti-hyperlipidemic medications was not fully utilized.