

HMG-CoA Reductase Inhibitors (Statins) Drug Utilization Evaluation

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Background

- Under the HADF 2005, four statins (atorvastatin, fluvastatin, rosuvastatin and simvastatin) are classified as Special Drugs, which will be prescribed for the listed indications if clinically indicated
- Statin therapy contributes to a significant amount of drug expenditure in HA

Objectives

- To evaluate whether statins were prescribed according to HADF 2005 Operation Guideline
- To review the appropriateness of dosing and monitoring
- To evaluate if the LDL-C goal has been achieved for patients

HADF Management Indication 2005

- Patient with dyslipidaemia and evidence of existing vascular disease (CAD, CVD, PVD) who would benefit from the treatment, as judged by a reasonable life expectancy and current quality of life
- Patient with dyslipidaemia, at least 3 risk factors (e.g. diabetes, hypertension, proteinuria), a very high Coronary Heart Disease risk (e.g. >30% risk over next 10 years), after appropriate treatment for hypertension and lifestyle modification (e.g. stop smoking, weight reduction). Patient should be of reasonable life expectancy and current quality of life
- Familial hyperlipidaemia
- Existing patient

Appropriateness of dosing and monitoring

- Doses of different statins
- Lipid profile (TC, LDL-C, HDL-C, TG)
- Creatine Kinase (CK)
- Liver and renal function parameters

Outcomes of statin therapy

- To assess if the LDL-C goal is achieved according to NCEP III guideline (National Cholesterol Education Program)

Methods

- Patients who were initiated statins within HA hospitals in November 2005 and continued treatment for one year were selected
- Medical records were reviewed to collect different parameters
- Values were taken 3 months before initiation of therapy (baseline), at 4-8 months after and 10-14 months after the start of therapy

Results (A total of 807 patients from 19 hospitals)

Indications	Total	According to HADF Guideline		
		Yes(%)	No (%)	Unk(%)
Patient with dyslipidaemia and evidence of existing vascular disease (CAD,CVD, PVD) who would benefit from the treatment, as judged by a reasonable life expectancy and current quality of life.	539(66.8%)	485(90%)	44(8.1%)	10(1.8%)
Patient with dyslipidaemia, at least 3 risk factors (e.g. diabetes, hypertension, proteinuria), a very high Coronary Heart Disease risk (e.g. >30% risk over next 10 years), after appropriate treatment for hypertension and life style modification (e.g. stop smoking, weight reduction). Patient should be of reasonable life expectancy and current quality of life	143(17.7%)	45(31.5%)	83(58%)	15(10.4%)
Familial hyperlipidaemia.	18(2.2%)	16(89%)	2(11%)	0
Existing patient	107(13.3%)	43(40.2%)	50(46.7%)	14(13%)

73% of statins prescription were started according to HADF Guideline

Results

Percentage of different statins prescribed at baseline, 6 month and 12 month

	Baseline(%)	At 6 mo(%)	At 12 mo(%)
Atorvastatin	122 (15.1%)	106(13.1%)	50(6.2%)
Fluvastatin	103(12.8%)	108(13.4%)	30(3.7%)
Rosuvastatin	102(12.6%)	96 (11.9%)	59(7.3%)
Simvastatin	480(59.5%)	492(61%)	663(82.3%)

88.2% of statins were prescribed within usual dosage range

Results

Percentage of patients who had the lab parameters monitored at baseline, 6 month and 12 month

	Baseline(%)	At 6 mo(%)	At 12 mo(%)	Baseline and 12 months (%)
Lipid levels	69.5%	51.2%	49.1%	37.2%
Creatine kinase	31.8%	22.8%	15.6%	7.4%
Liver function	65.4%	51.7%	46.3%	32.2%
Renal function	76.7%	62.3%	60.8%	49.2%

Results

LDL goal achieved at 12 month

All patients (n=807)	Yes	271 (33.6%)
	No	136 (16.9%)
	Unknown	400(49.6%)
Patients with LDL measured at 12 month (n=407)	Yes	271 (66.5%)
	No	136 (33.4%)

Conclusion

- 73% of statins were prescribed according to HADF operation guideline
- 88.2% of statins were prescribed within usual dosage range
- Overall, 33.6% of patients had achieved the LDL goal
- Among those patients who had the 12-month LDL level measured, 66.5% achieved LDL goal
- As almost half of patients had no LDL level measured at 12 months, follow up with doctors and/or patients would be necessary to reveal the true percentage of patients achieving the LDL goal
- Among those patients who failed to reach the LDL goal, only 4 patients had taken the maximum statin dose. Dosage adjustment may be necessary for the remaining patients to achieve the LDL goal