



PRESCRIPTION PATTERN OF STATINS IN CORONARY ARTERY DISEASE: A REVIEW

Jenna Johny*, K. Krishna Kumar, L. Panayapan, Rosmin Jacob*

Department of Pharmacy Practice, St. James College of Pharmaceutical Sciences, Chalakudy, Kerala, India. St. James Hospital Trust Pharmaceutical Research Centre (DSIR Certified) Chalakudy, Kerala, India.

*Corresponding Author Email: stjamespharmacyproject@gmail.com

ABSTRACT

Statins helps to reduce cardiovascular events in patients with cardiovascular disease. This review was undertaken to examine the current evidence for the effect of statins in patients with coronary artery disease. Statins are effective in both primary and secondary prevention of coronary heart disease (CHD), and other conditions. The present study is mainly focused on prescription pattern of statins in coronary artery disease. The different statins prescribed are Atorvastatin, Rosuvastatin, Simvastatin and Lovastatin. Statins are first-line agents in most cardiovascular disease situations.

KEY WORDS

Cardiovascular disease, Cholesterol, Secondary Prevention, Statins.

INTRODUCTION

A safe and effective drug therapy mostly is possible only when patients are well informed about the medications and their use. Every member of the healthcare team should practice rational drug therapy. Rational drug use means patients receive medications appropriate to their medication, in doses that meet their own individual requirements, for an adequate period of time and at the lowest cost to them and their community. Lack of knowledge about drugs, unethical drug promotions and irrational prescribing habits of clinician's leads to irrational prescribing of drugs. (1). Accurate diagnosis, proper prescribing, correct dispensing, suitable packing and patient adherence are the five important criteria for rational prescribing of drugs (2). Elevated cholesterol levels are a proven risk factor for cardiovascular diseases (CVDs) including coronary artery disease. Observational studies give an idea about the relationships between increased cholesterol and mortality, CVD, and decreased quality of life. The 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors (Statins) reduce atherogenesis (3). Prescribing patterns and drug utilization studies help the prescribers to create

awareness about the problems and to provide feedback about rational use of drugs (4). Therefore, the study on prescribing pattern definitely improve the quality of prescription writing, so study of drug prescribing pattern is relevant in the present scenario (5).

CLASSIFICATION OF STATINS

- Statins are classified according to the below criteria
- How they are obtained
- Liver metabolism
- Physiochemical properties
- Specific activity (6).

EFFECTS OF STATINS ON PATIENTS WITH CORONARY DISEASE

Statins are responsible for reducing serum low density lipoprotein by inhibiting 3-hydroxy —methyl glutaryl coenzyme A (HMG CoA reductase). Statin therapy before percutaneous coronary intervention (PCI) has been shown to reduce the incidence of periprocedural myocardial necrosis and to improve outcomes. Intensive lipid-lowering therapy with statins not only improves survival rates and clinical outcomes but also



reduces the progression of atherosclerosis a metaanalysis showed that statin pretreatment in patients with stable angina resulted in a relative reduction in procedural myocardial necrosis and overall major adverse cardiac events (7).

Table 2: Statin Equivalent Dosages

% LDL Reduction (approx.)	Atorva- statin	Fluva- statin	Lovastatin	Prava- statin	Rosuvastatin	Simva- statin
10-20%	_	20 mg	10 mg	10 mg	_	5 mg
20-30%	_	40 mg	20 mg	20 mg	_	10 mg
30-40%	10 mg	80 mg	40 mg	40 mg	5 mg	20 mg
40-45%	20 mg	_	80 mg	80 mg	5–10 mg	40 mg
46-50%	40 mg	_	_	_	10-20 mg	80 mg*
50-55%	80 mg	_	_	_	20 mg	_
56-60%	_	_	_	_	40 mg	

^{* 80} mg dose no longer recommended due to increased risk of rhabdomyolysis

Starting Dose										
Starting dose	10–20 mg	20 mg	10–20 mg	40 mg	10 mg; 5 mg if hypothyroid, >65 yr, Asian	20 mg				
If higher LDL reduction goal	40 mg if >45%	40 mg if >25%	20 mg if >20% With	_	20 mg if LDL >190 mg/dL (4.87 mmol/L)	40 mg if >45%				
Optimal timing	Anytime	Evening	evening meals	Anytime	Anytime	Evening				

Source: Wikipedia, 2012b.

STATINS: MECHANISM OF ACTION

HMG CoA reductase inhibitors competitively inhibit the activity of HMG CoA reductase, the rate-limiting enzyme in cholesterol synthesis which results in to active site and produces the action. (8)

INHIBITING CHOLESTEROL SYNTHESIS

Statins inhibit HMG CoA reductase there by inhibit the pathway for synthesizing cholesterol in liver. Statins with short half

lives are taken at night to maximize their effect. (9)

OTHER EFFECTS

As noted above, statins exhibit action beyond lipid-lowering activity in the prevention of atherosclerosis.

- 1. Improve endothelial function
- 2. Modulate inflammatory responses
- 3. Maintain plaque stability
- 4. Prevent thrombus formation. (10)

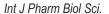
CONCLUSION

CAD is markedly more common in men than in women. Hypertension and diabetes were commonly associated with coronary artery disease. The prescribing pattern can be improved by reducing the

number of drugs per prescription. The study of prescription pattern provides an important framework for necessary modifications required to achieve decreased cellular concentration. Statins have similar structure of HMG CoA, which fits in patient oriented, cost effective and rational prescriptions.

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*Corresponding Author:

Rosmin Jacob*

Email: stjamespharmacyproject@gmail.com