Management and Follow-up of Dyslipidemia in Primary Health Care Setting

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ABSTRACT

Introduction: Management of dyslipidemia is an important part of most practice guidelines with many variations between these guidelines. Unfortunately, usually these guidelines are not followed widely on the level of primary care, possibly due to insufficient qualification of health care staff in primary care, non-participation in recent guidelines, and unrealistic target assigned to patients that leads them to non-compliance with medication and follow-up. **Methodology:** We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 2001, through February 2017. The following search terms were used: dyslipidemia, primary health care dyslipidemia management, follow-up of dyslipidemia.
Aim: In this review, we aimed at evaluating the management expected from primary health care for risk assessment, treatment and follow-up of patients with dyslipidemia.
Conclusion: Many guidelines exist for the proper management of dyslipidemia in the primary care setting. Screening is crucial for preventing the cardiovascular sequelae of dyslipidemia. Management modalities include lifestyle modification and pharmacotherapy, while the significance of follow-up cannot be neglected.
Keywords: primary health care dyslipidemia management, follow-up of dyslipidemia, statin therapy, non-statin therapy

INTRODUCTION

Managing dyslipidemia is an essential part of most practice guidelines with several variations between these guidelines. However, usually these guidelines are not followed widely on the level of primary care. A possible reason for this is the lack of sufficient qualified doctors working in primary care (about 17% of physicians) and participating in the development of these guidelines. Another reason is the unrealistic target recommendations that many patients find very difficult, especially the long-term adherence required for chronic management and prevention[1].

Patients, who have marked elevation in lipid levels despite lifestyle modifications, should be evaluated thoroughly for genetic hypercholesterolemia. Moreover, usual guidelines are not applicable for these patients, and should follow specific recommendations. In addition, hypertension is an important factor that affects dyslipidemia management and cardiovascular disease (CVD) risk[2].

METHODOLOGY

• **Data Sources and Search terms**
We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 2001, through February 2017. The following search terms were used: dyslipidemia, primary health care dyslipidemia management, follow-up of dyslipidemia

• **Data Extraction**
Two reviewers have independently reviewed the studies, abstracted data, and disagreements were resolved by consensus. Studies were evaluated for quality and a review protocol was followed throughout.
The study was done after approval of ethical board of Imam Mohammad Ibn Saud Islamic university.

Risk assessments

The best predictor of estimated improvement when on statins is the overall risk, rather than lipid levels. The absence of a reliable risk assessment tool, makes calculating the overall risk somewhat challenging, for both patients and physicians. An important reason for insufficient management of high-risk patients may sometimes be the reliance on lipid levels to predict improvement.

On the other hand, risk estimation improves decision making and patient-physician relationship, by discussing the baseline risk and potential benefits of statins with the patient. About 25-35% decrease in

CVD baseline risk is expected following the use of statins; so a patient with a 20% risk of CVD within ten years, will have his risk reduce into 13-15% with statins therapy[3].

Diabetes and chronic kidney disease

Diabetics and patients with renal failure have higher risk of CVD than the general population, but this higher risk is still less than patients with coronary artery disease. Diabetes is included when calculating CVD risk using the Framingham calculator. However, when calculating the risk for patients with renal failure, the use of the risk equation QRISK2 is recommended[4].

Most diabetics and renal patients have a CVD risk higher than 10%, which makes many physicians simply prescribe statins to this whole population. However, without accurate risk calculation, it will be more difficult to put an effective management plan and make patients understand their risks and benefits[5].

Biomarkers

The risk of CVD is also associated with many biomarkers. However, accurate understanding of this research can be challenging due to many limitations. Any biomarker that is added to a risk assessment tool should add important significant information that significantly improve the meaning of these tools' results. The only biomarker that is included in these tools is the coronary artery calcium levels, which was found to improve the accuracy of performance measures when added to the Framingham risk. However, it is not until now validated, and further research considering is safety and cost-effectiveness is needed. Other biomarkers include lipoproteins and C-reactive protein, and have evidence that they are not effective to be added to risk assessment tools. In conclusion, no solid evidence is available now to promote using biomarkers during the management of CVD[6].

Management
Lifestyle

Lifestyle modifications are crucial in the management of dyslipidemia, and it is considered as the first-line treatment when targeting lower CVD risk. We have not discussed this point thoroughly in this review, but we mentioned the three most important lifestyle modifications that need to be followed by all patients[1]:

Smoking cessation: There is solid evidence to support that smoking cessation significantly reduces mortality and morbidity in all patients. Moreover, some argue that the benefits of smoking cessation may be even higher than the benefits of drugs therapy[7].

Exercise: A significant decrease in mortality, morbidity, and CVD risk was found in high-risk patients who exercised when compared to those who do not. This reduction can sometimes be better than drugs intervention. It is recommended that all patients exercise for not less than 150 minutes a week[7].

Mediterranean diet: Patients who followed the Mediterranean diet were also found by several clinical trials to have a significantly less risk of CVD than patients who do not. This reduction was equivalent the reduction provided by statins therapy[8].

Statins

Of all drugs that lower lipids levels, only statins were found to significantly improve the overall survival and risk of CVD. Therefore, statins are the drugs of choice in all patients who require drugs. However, CVD risk estimation and management need to be stopped after age 75 years, as no enough evidence support the treatment by this age group. On the other hand, the use of statins for secondary prevention is well documented in all age groups and must be applied[9].

It is preferred not to use pravastatin in patients older than 65 years, as some suggest that it may be associated with an increased risk of cancer. Other statins, and pravastatin in patients younger than 65 years, do not have this risk. In patients who are already on statins and have good compliance and tolerability, there is no need to stop treatment when they become older than 65 years[10].

Dose-adjustment according to LDL levels is not recommended, as evidence is present only for specific doses. The estimated level risk is the main factor that influences possible benefit rather than LDL levels. Higher doses or higher potency statins significantly reduce CVD risk more than lower doses or lower potency statins, in cases of secondary prevention. So the decision of the therapy should depend on the potency, type, and dose of the statin therapy[11].

In general, the use of moderate to high intensity statins is preferred in all patients. Use of high

intensity statins is associated with about 10% better secondary prevention. However, no evidence is available to favor any statin dose in primary prevention[9].

Non-statin therapy

Fibrates, niacin, ezetimibe, and bile-acid sequestrants are among the most common non-statin drugs. Fibrates have not been found to improve survival and mortality, but they were found to significantly decrease the rate of nonfatal myocardial infarctions, and overall CVD (less than statins effect)[12].

An old trial suggested that niacin may have benefits. However, niacin has failed to prove benefits since the use of statins. Moreover, higher rates of adverse events and long-term complication were associated with fibrates, niacin, and bile-acid sequestrants[13].

Although ezetimibe is tolerated by most patients, no significant improvement either on mortality or CVD risk was associated with its use alone. However, the combination therapy of ezetimibe with simvastatin was found in the IMPROVE-IT trial to achieve a 6% reduction in CVD risk[13].

In case of secondary prevention, a possible option to be used instead of statins is ezetimibe, but it is essential to be addressed that it still has less efficacy than low-intensity statins, and significantly less efficacy than high-intensity statin. The absolute 10-year risk reduction associated with ezetimibe use is only 1% in high-risk patients, and less with low to moderate-risk patients.

Therefore, the use of ezetimibe is not recommended in primary prevention. The last point is that the possible effects of ezetimibe are associated with expected risk, and no association exists between the possible benefits and baseline LDL levels[12].

Follow-up
Target lipid level

Generally, it is recommended to use lipid lowering agents to different risk groups and populations, and many guidelines are present to support this. There is no evidence to support specific targets or measures to guide adjustment of statin therapy. No published researches have shown any evidence to support the use of a particular lipid target to improve CVD outcomes[2].

Repeating measurement of lipid levels after starting a statin

After initiation of statins therapy, no evidence supports re-measuring lipid levels. Many clinicians consider re-measuring important to estimate treatment adherence, but it still does not increase the level of adherence and compliance. However, patient reinforcement, frequent reminding, medication calendars, and pharmacist medication reviews have all proved to improve compliance[14].

CVD can still increase even in patients on statins therapy, as they might develop new risk factors. However, repeated measuring of lipid levels will lead to inaccurate prediction of CVD risk. So it is better and more accurate to add new risk factors to pretreatment lipid levels to estimate the overall risk[15].

Adverse effects of statins

Of the most common adverse events associated with statins use, are muscle and liver injury, and blood glucose increase. Myalgia commonly occurs with statin use, but it rarely leads to rhabdomyolysis, liver failure, or other serious complications. Many patients on statins therapy may have increased creatinine kinase (CK) and liver enzymes levels while are still asymptomatic. Usually these increased levels with slowly normalize over time even without cessation of statins. Patients who have other morbidities, or are on other drugs, may have an increased risk of adverse events. The risk of diabetes type 2 is approximately increased by one over 250 over 5 years with the use of low-potency statins[16].

The rate of adverse events is proportionally related to the use of statin, which may sometimes lead to cessation of therapy. Most patients who stopped statins therapy due to adverse events will tolerate another statin regimen[17].

CONCLUSION

Many guidelines exist for the management of dyslipidemia in the primary care setting. Proper screening is crucial for preventing the cardiovascular sequelae of dyslipidemia. Management modalities include lifestyle modification and pharmacotherapy. Follow-up with this patient category is crucial due to the chronic nature of this condition as well as the possible adverse effects of its treatment.

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