Diabetic Dyslipidemia from Guidelines into Clinical Practice

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Introduction
Consists of specifically mild to marked elevation of triglyceride-rich lipoproteins (VLDLs) and VLDL remnants concentrations and low levels of HDL-C. Raised serum triglycerides and low HDL-C often precede the onset of T2DM for many years (Figure 1).

Pathophysiology of Diabetic Dyslipidemia:
• In diabetes, greater amounts of FFAs returning to the liver are reassembled into triglycerides and secreted in VLDL.
• Due to the elevation of triglyceride concentration, VLDLs remains in circulation for longer periods. This allows an increased transfer of cholesterol esters, leads top production of sdLDL (Figure 2).
• In poorly controlled T1DM, insulin replacement in these patients correct lipid abnormalities completely.
• In T2DM, this phenotype is not usually fully corrected with glycemic control, suggesting that insulin resistance and not hyperglycemia per se are associated with this lipid abnormality.

Guidelines recommendations for management of diabetic dyslipidemia:
In ATP III guidelines, any individuals 40 to 75 years of age with diabetes should be offered statin. ADA 2016 recommendations for diabetic dyslipidemia is to keep LDL <100 mg/dl (high risk group keep <70 mg/dl), TG <150 mg/dl and HDL >40 mg/dl in men, and >50 mg/dl in women.

Four rules in diabetic dyslipidemia management:
• Diabetic Dyslipidemia Rule 1: Always achieve LDL target first with statin unless TG >500 mg/dl. Keeping LDL <100 mg/dl (<70 mg/dl in high risk).
• Diabetic Dyslipidemia Rule 2: Use high intensity statin in high risk patient (CVS events) Figure 3.
• Diabetic Dyslipidemia Rule 3: Add Fibrate to statin when TG >200 and HDL <40 mg/dl.
• Diabetic Dyslipidemia Rule 4: The benefit of statin in lipid reduction, outcomes the risk of New Onset Diabetes (figure, 3).

Conclusion and recommendations:
Individuals 40 to 75 years of age with diabetes, should be offered statin. An approximate 23% reduction in CVD events per 1 mmol/l reduction in LDL-C, with no threshold below which benefit ceases. Achievement of Lipid targets is key in reduction of CVS mortality in diabetic patients.

References:
1. ADA Guidelines 2016.

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