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New emerging drugs for treatment of dyslipidemia: Review on clinical studies

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Statins being very effective and safe in numerous randomized clinical trials became the first-line treatment against atherogenic dyslipidemia. However, even with optimal statin treatment, 60% to 80% of residual cardiovas¬cular risk still exists. The patients with Familial Hypercholesterolemia (FH) which results in extremely high level of Low Density Lipopro¬tein Cholesterol (LDL-C) level and the patients who are intolerant or unresponsive to statins are the other hurdles of statin treat¬ment. Recently, new classes of lipid-lowering drugs have been developed:

- The pro-protein convertase subtilisin/kexintype 9 (PCSK9) inhibitor increases the expression of LDL receptor in hepatocytes by enhancing LDL receptor recycling. It recently showed promising results of significant LDL-C lower¬ing in FH patients from the long-term phase III trials.
- The microsomal triglyceride transport protein (MTP) inhibitor and antisense oligonucleotide against apolipoprotein B (ApoB) reduce the ApoB containing lipoprotein by blocking the hepatic very low density lipoprotein (VLDL) synthesis pathway.
- The apolipoprotein A1 (ApoA1) mimetics pursuing the beneficial effect of high density lipoprotein cholesterol and can reverse the course of atherosclerosis. However it needs more validation in humans.
- 2, 3-diaryl-substituted indole-based Cyclooxygenase-2 (COX-2) inhibitors (2,3-diaryl-indole coxibs) are potent antiinflammatory agents and also show the ability to scavenge Reactive Oxygen Species (ROS). Therefore act as potent inhibitors of oxidative modification of Low-Density Lipoprotein (LDL), which is considered a key factor in atherogenesis.

We would discuss the benefits and concerns of these new lipid-lowering drugs anticipating additional benefits beyond statin treatment.

Biography

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