

PCSK9 inhibitor

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Overwhelming evidence continues to identify elevated LDL cholesterol as a clinically important source of accelerated atherosclerosis and elevated cardiovascular risk. The introduction of statin provides marked reduction in LDL cholesterol and has shown clinical benefit in cardiovascular event rates in patients at high cardiovascular risk. Nevertheless, many patients with elevated LDL cholesterol do not achieve their LDL cholesterol goals with current treatments. In addition, cardiovascular disease still remains an important cause of mortality and morbidity. Proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors further reduce LDL cholesterol, potentially reducing cardiovascular events as well. Several PCSK9 inhibitors are currently in clinical development and some of them have been under cardiovascular outcome trials; evolocumab, alirocumab, and bococizumab. The FOURIER study, the first completed cardiovascular outcome trials to examine the impact of PCSK9 inhibition with evolocumab on cardiovascular events, has been reported in Mar 2017. The ODYSSEY study is ongoing prospective trials with PCSK9 inhibitor, alirocumab. It is expected that this study will be completed in early 2018 and currently a post hoc analysis from 10 ODYSSEY trials has been reported. The SPIRE-1, 2 study with PCSK9 inhibitor, bococizumab, was prematurely terminated because of discontinued development of bococizumab on Nov 2016. In this talk, I will introduce current cardiovascular outcome trials in terms of clinical implication and future perspective.