Chapter 2.3
Niacin for reduction of cardiovascular risk

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In his editorial on HPS2-THRIVE, Lloyd-Jones states that the HDL cholesterol level should be considered only as a risk marker for coronary heart disease and that increasing the HDL cholesterol level does not affect cardiovascular risk (1). This opinion is largely based on the results of HPS2-THRIVE (2) and the Atherothrombosis Intervention in Metabolic Syndrome with Low HDL/High Triglycerides: Impact on Global Health Outcomes (AIM-HIGH) study (3). In our opinion, this conclusion is premature. In both randomized, controlled trials, niacin (which increases the HDL cholesterol level) was compared with placebo but with the concomitant use of statins and with low mean LDL cholesterol levels at baseline (1.63 mmol per liter in HPS2-THRIVE and 1.91 mmol per liter in AIM-HIGH). Moreover, half the patients in HPS2-THRIVE had a normal HDL cholesterol level (mean, 1.14 mmol per liter). This probably explains the modest increase in the HDL cholesterol level (0.16 mmol per liter) and decrease in the LDL cholesterol level (−0.25 mmol per liter) and, in turn, the lack of a significant effect on major vascular events. Moreover, this design can lead to more drug interactions and, therefore, more side effects in the group receiving multiple drugs.

Finally, the atheroprotective properties of HDL cholesterol are based not only on concentration but also (and probably more) on the protein composition of the HDL cholesterol particle (4). Therefore, drugs that substantially increase HDL cholesterol levels or alter HDL-protein composition could have atheroprotective effects (5).
References
