

## LIPIDS

## Eprotirome shows promise as a novel way to target dyslipidemia

The liver-specific thyroid hormone analog eprotirome is safe and effective as an adjunct to statin therapy in patients with dyslipidemia, according to a study in the *New England Journal of Medicine*.

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“The idea to stimulate cholesterol elimination by treatment with thyroid hormone is very old, but the trick has been to avoid the adverse effects, particularly on heart, bone and on the hypothalamic–pituitary–thyroid axis,” explains senior researcher Bo Angelin (Karolinska University Hospital, Sweden).

Liver-specific thyroid hormone analogs, such as eprotirome, have shown promising results in animal models, which has raised the interest to test these

compounds in humans. Angelin and co-workers aimed to determine the safety and efficacy of eprotirome when given in addition to standard hypolipidemic treatment with statins.

In a randomized, placebo-controlled, double-blind, multicenter trial, Ladenson *et al.* enrolled 189 patients with hypercholesterolemia (aged 18–65 years) who had been treated with simvastatin ( $\leq 40$  mg daily) or atorvastatin ( $\leq 20$  mg daily) for at least 3 months but continued to have an LDL cholesterol level  $\geq 3.0$  mmol/l. In addition to statin treatment, patients received either eprotirome (at a dose of 25  $\mu$ g, 50  $\mu$ g or 100  $\mu$ g per day) or placebo over 12 weeks.

Notably, treatment with eprotirome seemed to be safe from adverse effects, and a substantial additional lowering of atherogenic lipoproteins could be achieved. Furthermore, two important risk factors that are not influenced by statins—triglycerides and lipoprotein Lp(a)—were drastically reduced with eprotirome.

A larger and longer study to confirm the efficacy and safety of eprotirome will be necessary and will hopefully also reveal its effects on clinical end points (such as, atherosclerosis). More detailed studies on mechanistic aspects of eprotirome treatment in humans, including studies in genetic dyslipidemias, should also be on the research agenda.

Nevertheless, “eprotirome represents a very promising novel way to target dyslipidemia, which could be of great help for improving the treatment of patients who do not reach their therapeutic goals with statins and as a treatment option for those who cannot take statins. It may also be of benefit to patients with mixed hyperlipidemia, a common and high-risk subpopulation in whom statin therapy is not ideal,” concludes Angelin.

Linda Koch

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