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LETTER

Should children with type 1 diabetes really receive statin treatment using the same criteria as for children with familial hypercholesterolaemia?

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Abbreviation

FH Familial hypercholesterolaemia

To the Editor: We recently read the article by Corpeleijn et al [1] suggesting the early initiation of (lifetime) statin treatment in children with type 1 diabetes aged >10 years, based on the success story of statin use in children with familial hypercholesterolaemia (FH) and the authors' experience with this population.

We must disagree: although there is extensive interplay between lipid and glucose metabolism [2], the two populations of children with FH and children with type 1 diabetes are not comparable.

FH is a monogenic co-dominant disorder caused by the presence of pathogenic variants in the *LDLR* gene or, less frequently, in the *APOB* or *PCSK9* gene. Because of this genetic defect, LDL-cholesterol concentrations are high from birth and this, over many years, confers an increased risk of premature CVD [3]. In fact, without treatment, individuals with FH may develop CHD after the age of 20 years. Indeed, there is evidence that lipid-lowering treatment in children with FH is associated with a reduction in intima–media thickness and fewer cardiovascular events [3]. For this reason, drug treatment is recommended from 8–10 years of age [1].

On the other hand, the cause of type 1 diabetes is insulin deficiency and, although type 1 diabetes is associated with increased cardiovascular risk, glucose control is an important driver of this and intensive insulin therapy has been shown to reduce the incidence of cardiovascular events [4]. Furthermore, people with type 1 diabetes and high HbA_{1c} levels have deleterious lipid modifications, but most of these changes are reverted with improved HbA_{1c} levels [5, 6]. Indeed, the lipid profile of people with type 1 diabetes and blood glucose levels within the target range is similar to or even better than that in people without diabetes [5].

In recent years, new therapeutic tools for use in type 1 diabetes, such as continuous glucose monitoring and automatic insulin delivery through hybrid closed loop systems, have led to children achieving historically low HbA_{1c} values of around 6.6% [7]. This will, with high probability, have a positive impact on their future cardiovascular event risk [8]. Thus, most of the focus for improving cardiovascular risk in children with type 1 diabetes should probably be on glucose optimisation from disease onset, rather than pursuing pharmacological interventions with less associated population-specific evidence.

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