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# Statin Use and the Risk of Cataracts: A Systematic Review and Meta-Analysis

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RE: Statin Use and the Risk of Cataracts

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We read with interest the meta-analysis on statin use, LDL lowering and cataracts by Yu and associates and we are gratified that the authors mention our meta-analysis on the issue. [1] We agree with their overall conclusions and report current data on LDL lowering with statins and PCSK9 inhibitors.

Inclusion of observational studies in meta-analyses may introduce bias and confounding, as we stated in our paper. [2] For this reason, we examined the relationship between LDL lowering and cataract using only randomized clinical trials.

We have speculated that lower serum cholesterol or the pleotropic effects of statins on inflammation and oxidation might explain a possible protective effect. [2] On the other hand, cholesterol is needed for maintaining the transparency of the lens, and very low cholesterol, as observed during therapy with PCSK9 inhibitors, could potentially facilitate the formation of cataracts. [3]

We analyzed all currently available information on statins reported in our initial paper [2], HOPE-3 [4] and IMPROVE-IT [5] as well as published data on PCSK9 inhibitors. [6-9] Similar to the report of Yu and associates, we did not observe a significant association between statin use or PCSK9 inhibitor use and cataract (OR 1.06, 95% CI .92 to 1.22, p=0.4317). The inclusion of very low achieved LDL cut-offs in this analysis is congruent with the findings of Yu and associates. Cumulative meta-analysis, as well as when one study was removed sequentially, did not alter the conclusions of this report. There was no publication bias or heterogeneity and comparison of the effects of statins versus PCSK9 inhibitors did not indicate a statistically significant difference or heterogeneity.

In summary, examination of all available data from randomized trials on the relationship of cholesterol lowering with cataract does not indicate any protective or adverse effect. Since it is impractical to conduct a prospective study specifically Statin Use and the Risk of Cataracts: A Systematic Review and Meta-Analysis | Journal of the American Heart Association

designed to detect cataracts, inclusion of cataract as an end point in future studies of currently marketed medications is advisable.

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Competing Interests: None declared.

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