Supplementary data

Additional details concerning study assessment and selection.

Twenty-one candidate trials were identified for further assessment. [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21]

Six studies that were discarded as they were not focused on therapy with statins. [11, 12, 14, 15, 16, 17]

On further examination of these 15 remaining studies, 5 were excluded either because they did not report any extractable data, [7, 19, 21] because of possible duplicate publication,[5] or because they were focused on rheumatic aortic stenosis.[4]

Of the 10 studies finally selected for meta-analysis, 5 were prospective,[1, 2, 3, 10, 20], 5 retrospective,[6, 8, 9, 13, 18] whereas 3 were randomized,[1, 3, 20] and 7 not randomized,[2, 6, 8, 9, 10, 13, 18] respectively.

Finally, only three studies enrolled patients with average LDL cholesterol levels ≤ 130 mg/dL; of these, 2 were prospective [10, 20] and one retrospective [13].

ADDITIONAL REFERENCES

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Legend to eFigure

eFigure 1: Meta-analysis of studies (denoted by first author and publication year) assessing the effect of statin treatment on death from any cause at follow-up (panel A, Odds Ratio and 95% confidence intervals), death from cardiovascular causes at follow-up (panel B, Odds Ratio and 95% confidence intervals), need to undergo aortic valve surgery at follow-up (panel C, Odds Ratio and 95% confidence intervals), peak aortic-jet velocity progression (panel D, mean difference and 95% confidence intervals), and aortic valve area decrease (panel E, mean difference and 95% confidence intervals), peak aortic gradient progression (panel F, mean difference and 95% confidence intervals), and on mean aortic gradient progression (panel G, mean difference and 95% confidence intervals). Squares indicating individual trial differences are scaled according to weighting in the meta-analysis. The width of the diamond for pooled data denotes the lower and upper 95% confidence intervals. Note that the x-axis of panels A-C is logarithmic.

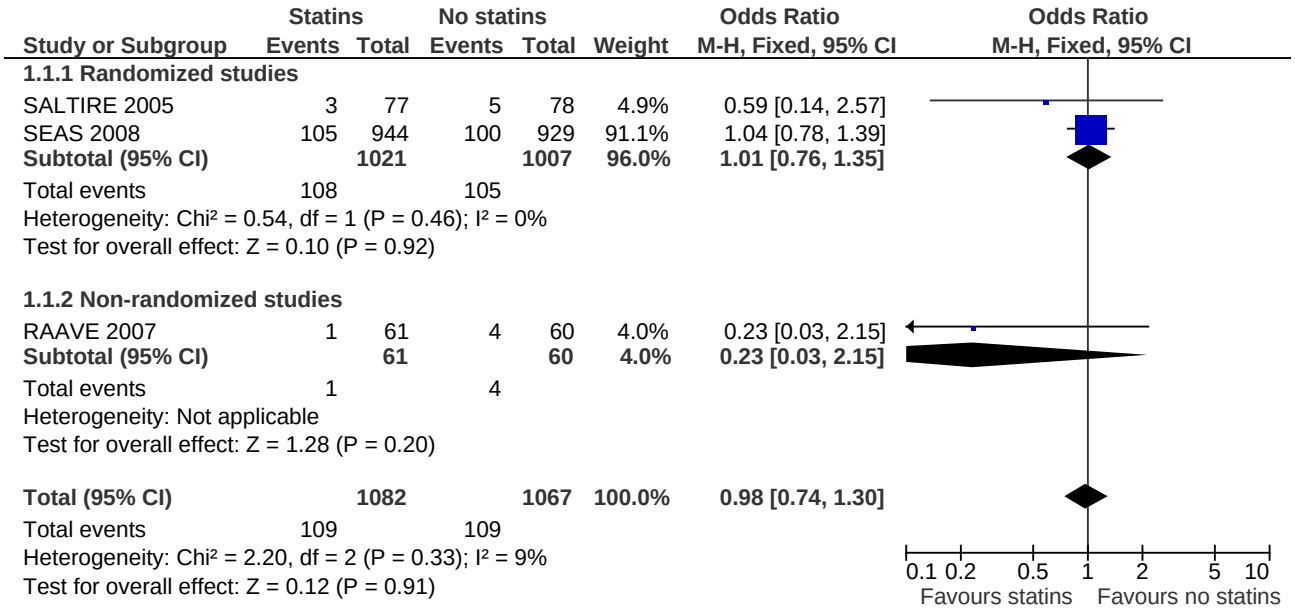
eFigure 2: Meta-analysis of studies that enrolled patients with an LDL-cholesterol ≤ 130 mg/dL assessing the effect of statin treatment on aortic stenosis progression in studies: aortic valve area decrease (panel A, mean difference and 95% confidence intervals), peak aortic gradient progression (panel B, mean difference and 95% confidence intervals), and on mean aortic gradient progression (panel C, mean difference and 95% confidence intervals). Squares indicating individual trial differences are scaled according to weighting in the meta-analysis. The width of the diamond for pooled data denotes the lower and upper 95% confidence intervals.

eFigure 3: Meta-regression analysis of studies assessing the effect statin treatment duration on peak aortic-jet velocity progression over time.

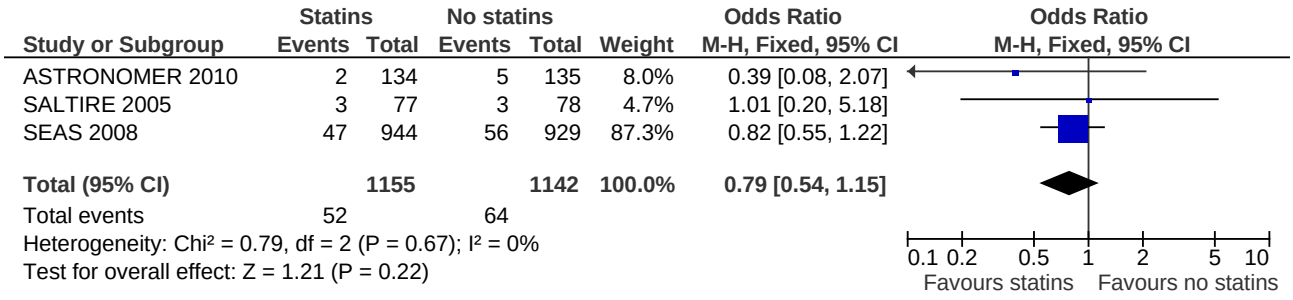
eFigure 4: Meta-regression analysis of studies assessing the effect statin treatment duration on aortic valve area decrease over time.

eFigure 1
Forest plots for the outcomes of interest by randomized and non-randomized studies

Panel A



Panel B



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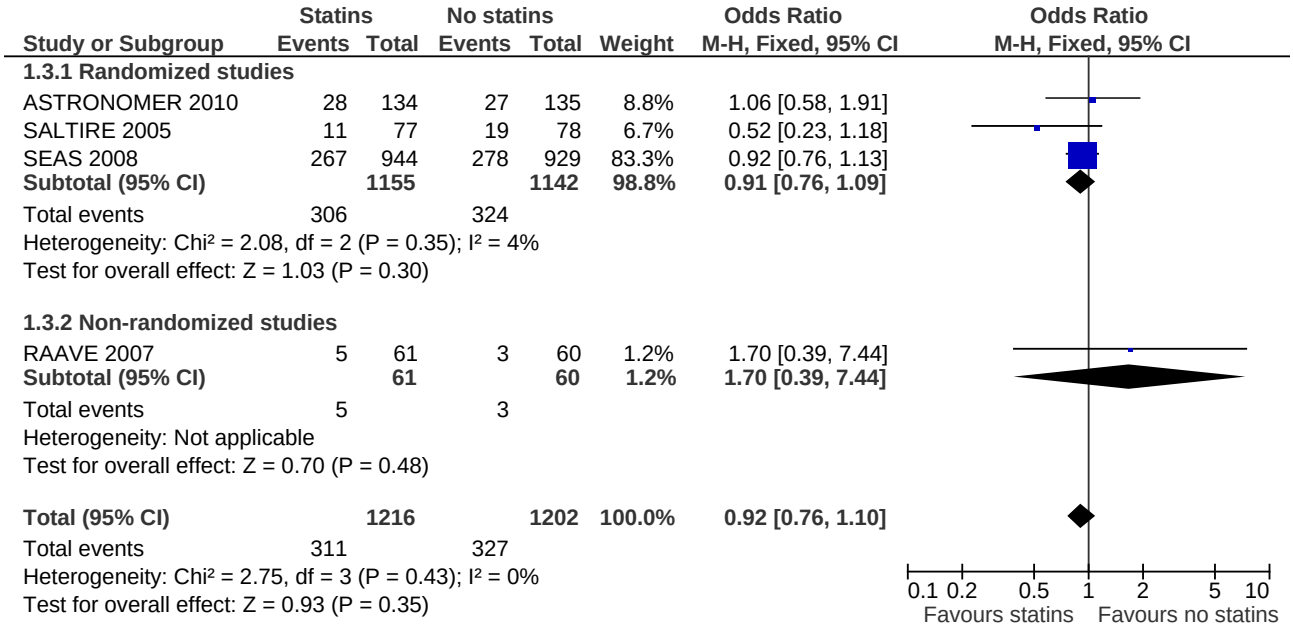

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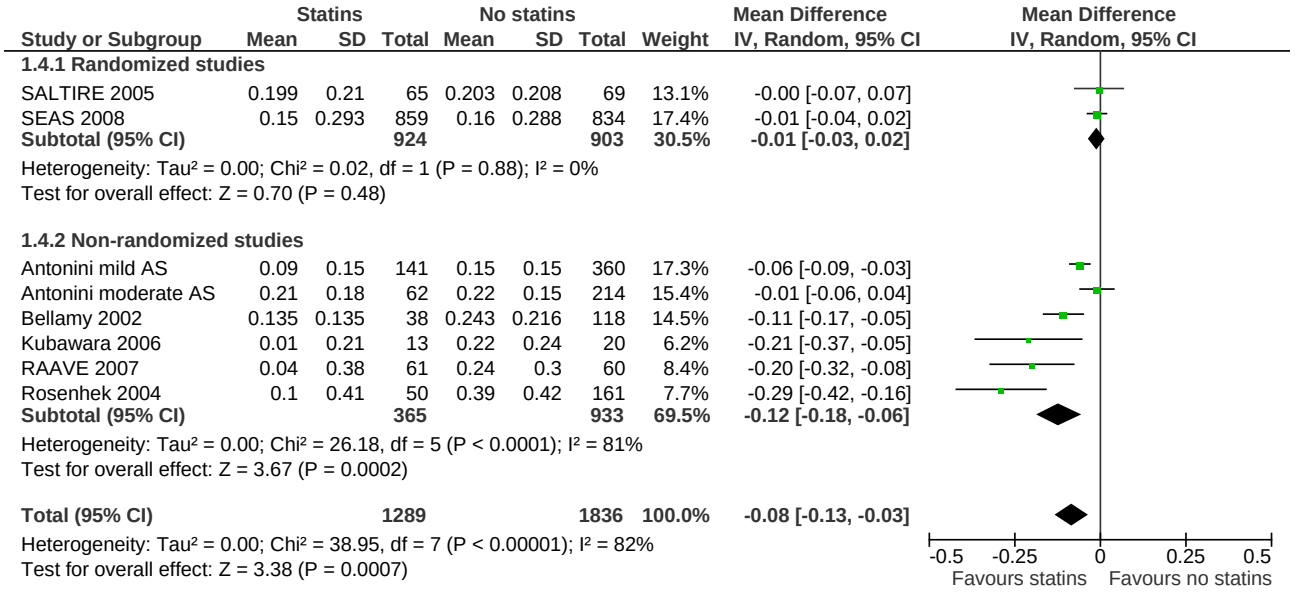

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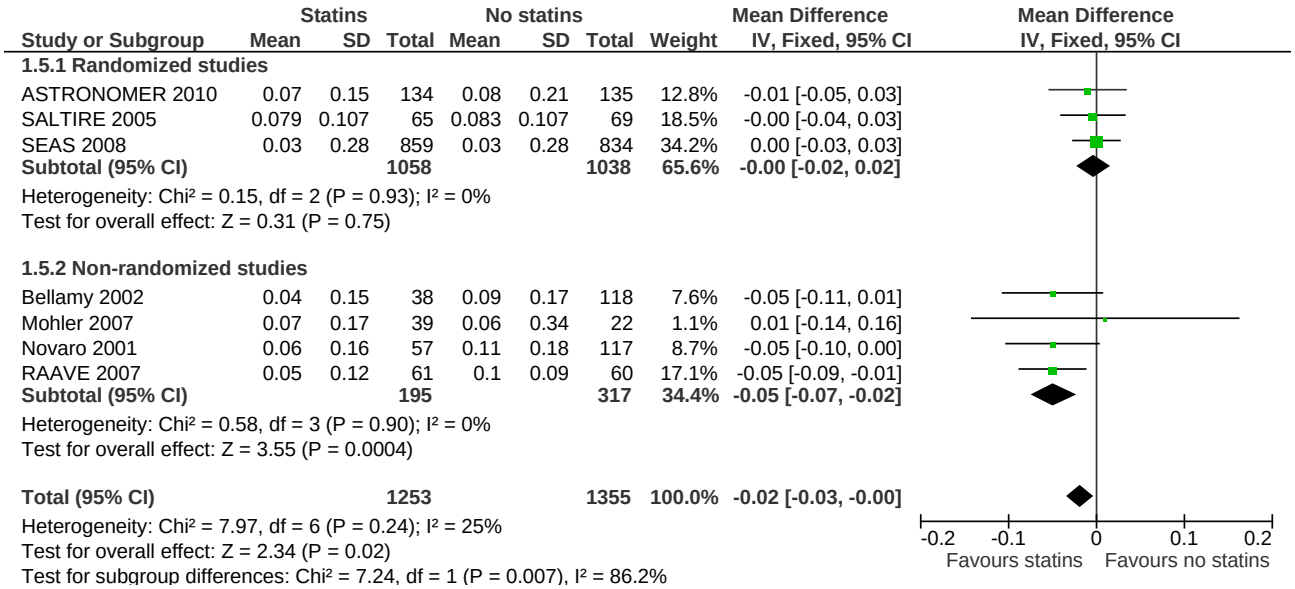

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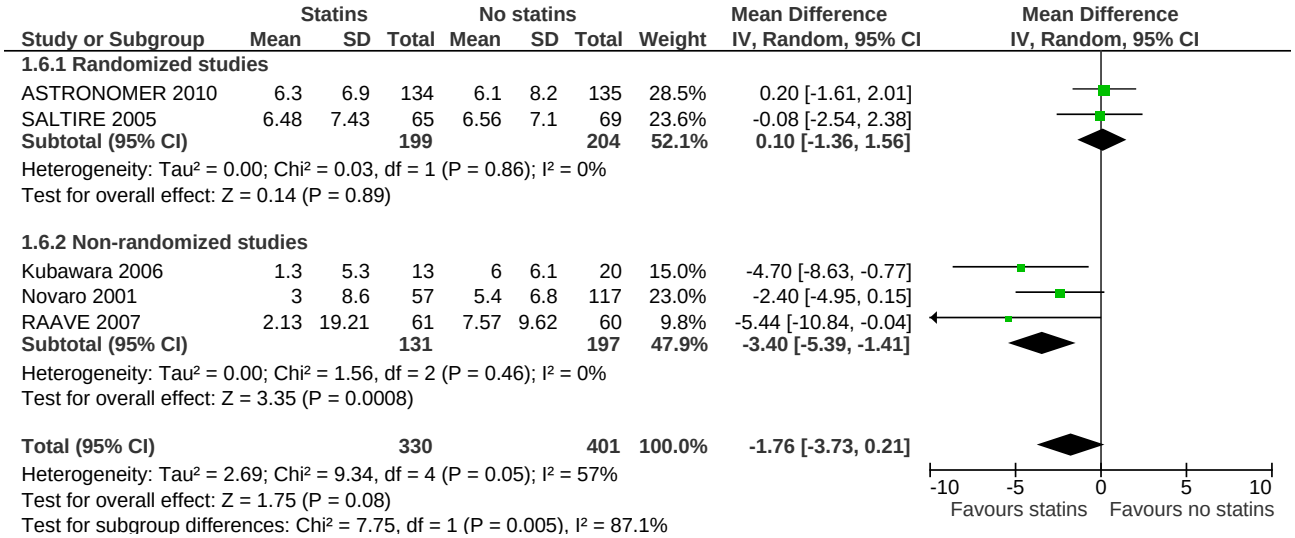
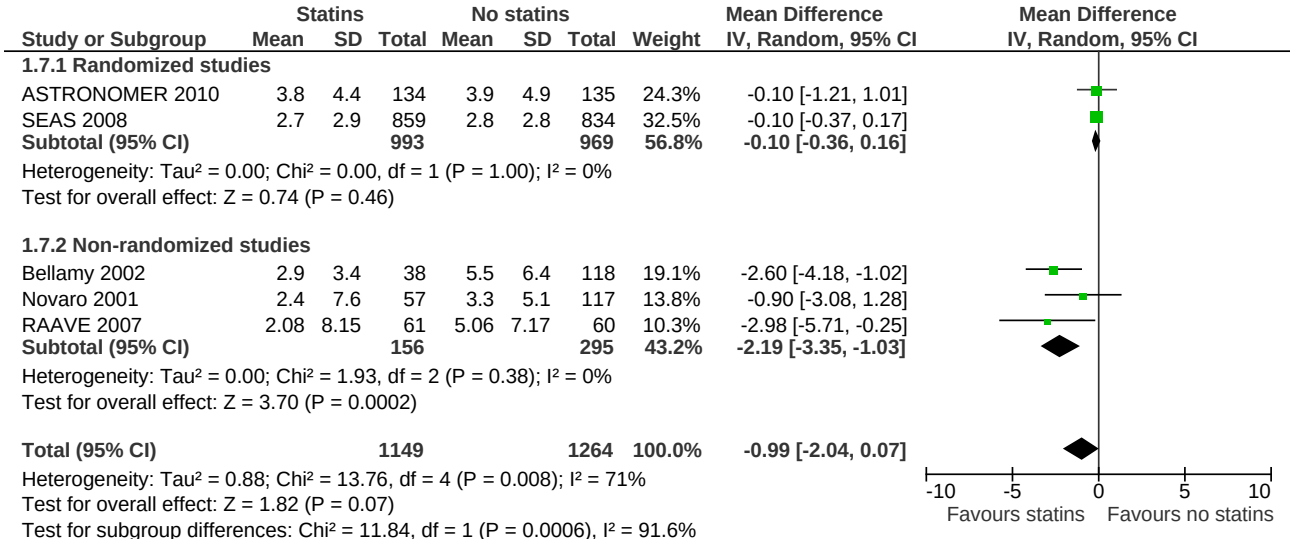


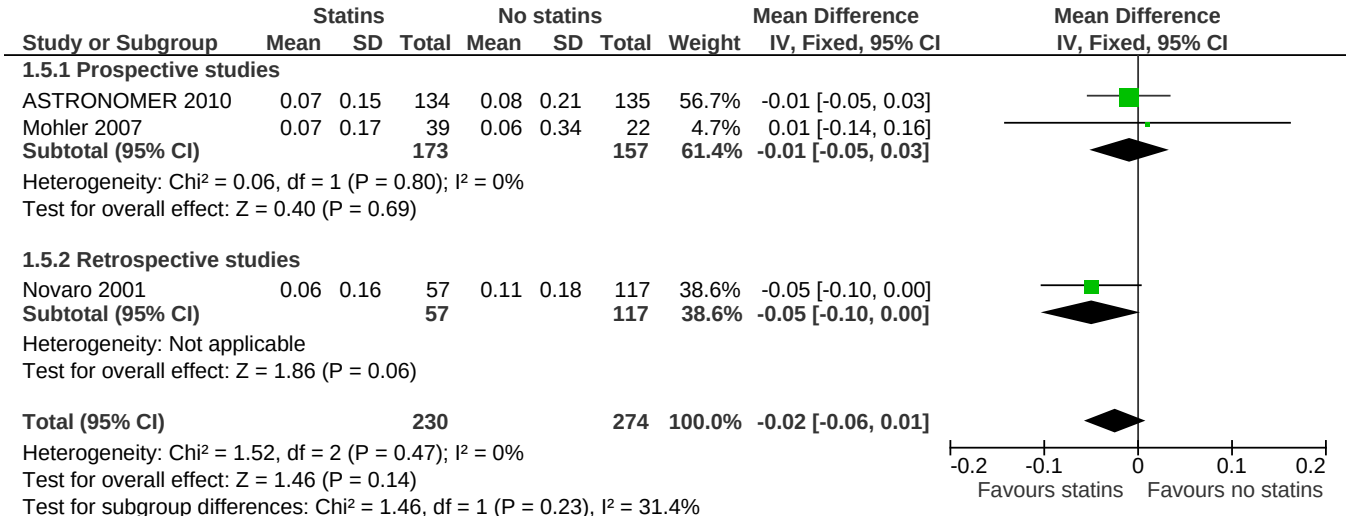
Panel G



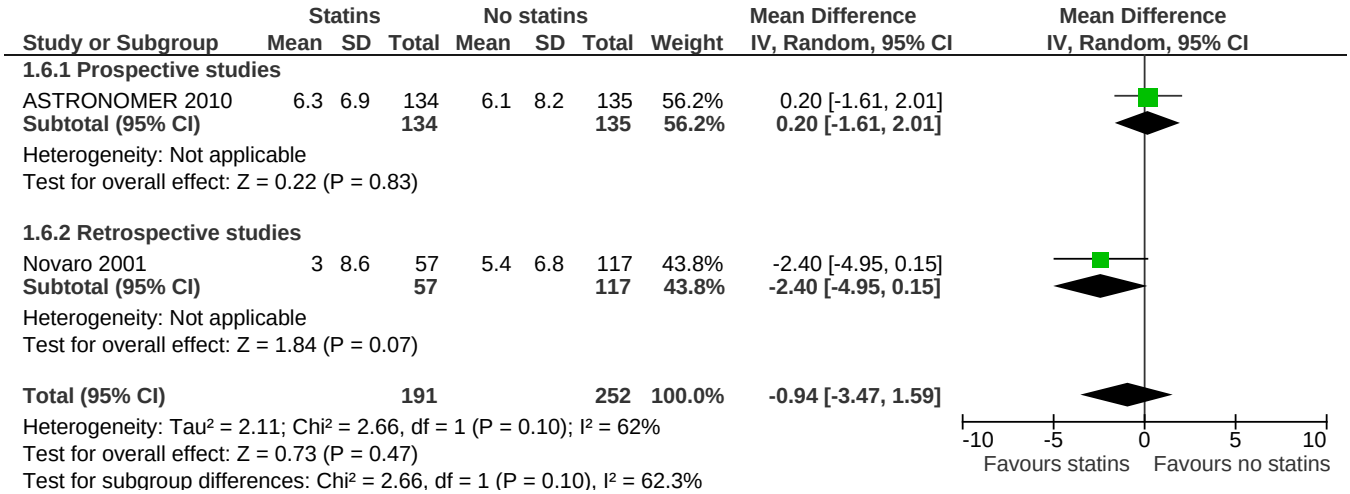
eFigure 2

Forest plots for the parameters of aortic stenosis progression in studies enrolling patients with an average cholesterol level ≤ 130 mg/dL

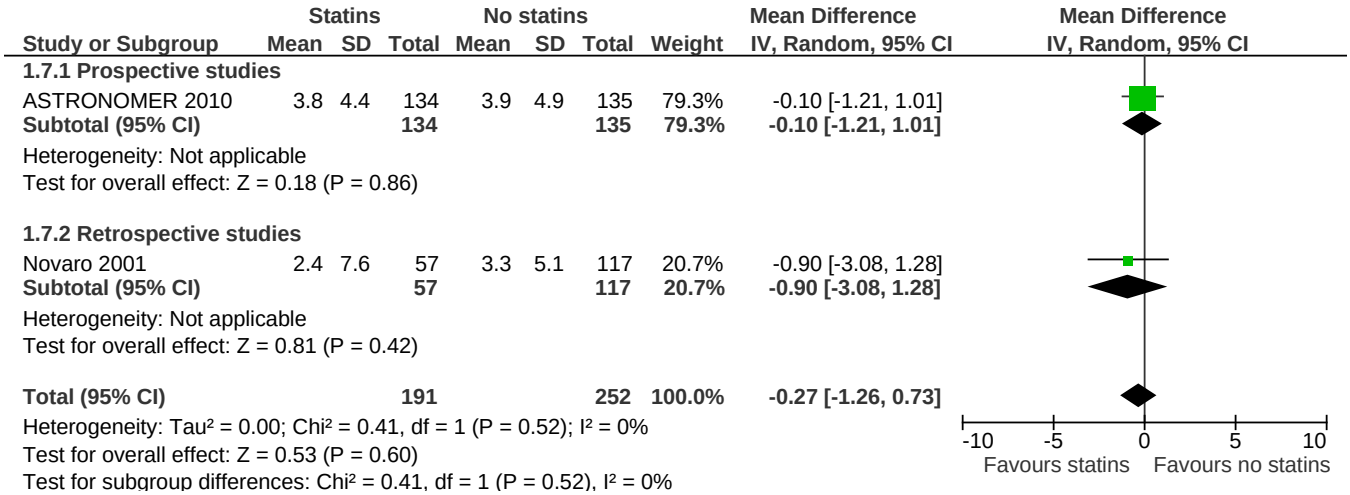
Panel A



Panel B

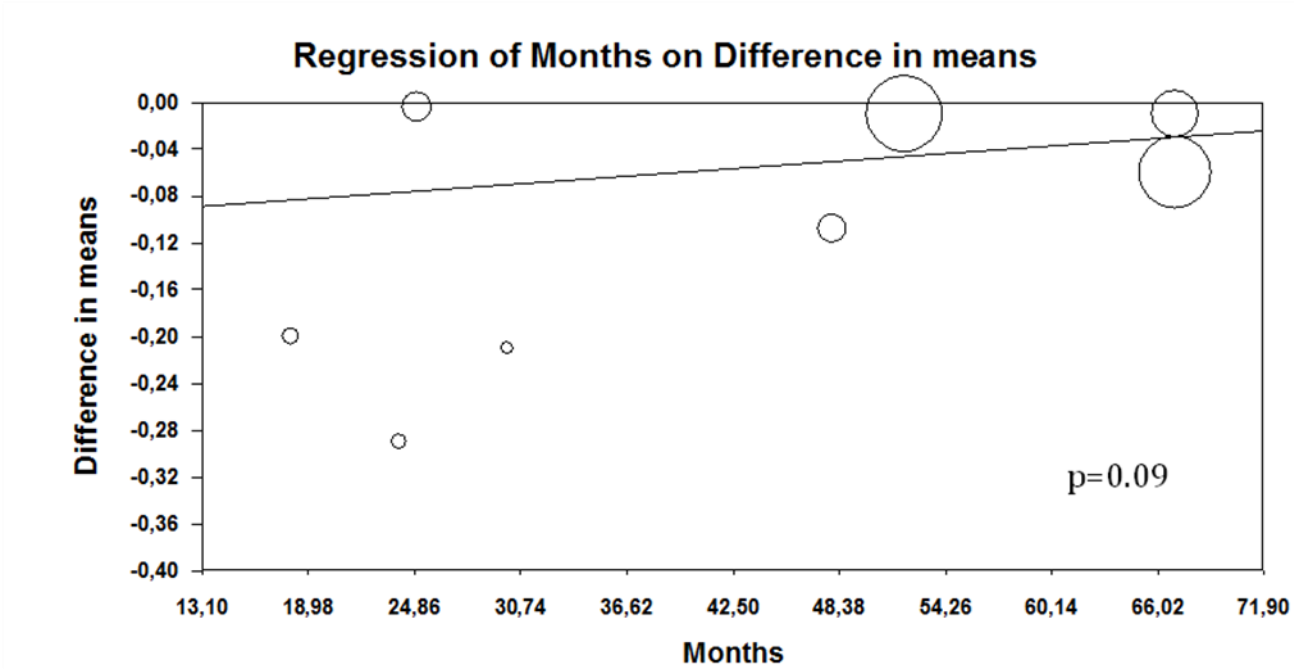


Panel C



eFigure 3

Bubble plot of the relationship between statin treatment duration and jet velocity progression across time



eFigure 4

Bubble plot of the relationship between statin treatment duration and aortic valve area decrease across time