The influence of statin medications on prostate-specific antigen levels.

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Abstract

BACKGROUND: Recent data suggest that statin use may be associated with a reduced risk of advanced prostate cancer. However, the influence of statins on prostate-specific antigen (PSA) levels and what effect this could potentially have on prostate cancer diagnosis are unknown.

METHODS: We conducted a longitudinal study of 1214 men who were prescribed a statin between 1990 and 2006 at the Durham Veterans Affairs Medical Center who were free of prostate cancer, had not undergone prostate surgery or taken medications known to alter androgen levels and who had at least one PSA value within 2 years before and at least one PSA value within 1 year after starting a statin. The change in PSA from before to after statin treatment was analyzed as a continuous variable using the Wilcoxon signed rank test. The association between change in PSA and change in cholesterol parameters (low-density lipoprotein [LDL], high-density lipoprotein [HDL], and total cholesterol) was analyzed using multivariate linear regression. All statistical tests were two-sided.

RESULTS: Mean (SD) age when starting statins was 60.3 (8.3) years; median prestatin PSA concentration was 0.9 (1.9) ng/mL; and mean prestatin LDL cholesterol concentration was 144 (34) mg/dL. After starting a statin, the median LDL decline was 27.5%, and the median PSA decline was 4.1% (P < .001, for both comparisons). Changes in PSA concentration were strongly associated with statin dose and changes in LDL levels. For every 10% decrease in LDL after starting a statin, PSA levels declined by 1.64 (95% confidence interval [CI] = 0.64% to 2.65%, p = .001). Among men most likely to be under consideration for prostate biopsy (prestatin PSA levels > or =2.5 ng/mL, n = 188), those with >41% declines in LDL (highest quartile) after starting a statin experienced a 17.4% (95% CI = 10.0% to 24.9%) decline in serum PSA.

CONCLUSIONS: PSA levels declined by a statistically significant extent after initiation of statin treatment. The reduction was most pronounced among men with the largest LDL declines and those with PSA levels that would make them candidates for prostate biopsy. By lowering PSA levels, statins may complicate cancer detection, although further studies are needed to quantify the clinical significance of this effect.

Comment in
Re: The influence of statin medications on prostate-specific antigen levels. [J Natl Cancer Inst. 2009]
Prostate-specific antigen: a misused and maligned prostate cancer biomarker. [J Natl Cancer Inst. 2008]

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