



STATIN USE AND MUSCULAR PROBLEMS: A CROSS-SECTIONAL ANALYSIS OF THE ELSA-BRASIL MUSCULOSKELETAL COHORT

Aline Fernandes Pedroso (Universidade Federal de São João Del Rey, Divinópolis, MG, Brasil), Rosa Weiss Telles (Faculdade de Medicina-Hospital das Clínicas - UFMG, Belo Horizonte, MG, Brasil), Luciana Andrade Carneiro Machado (Faculdade de Medicina-Hospital das Clínicas - UFMG, Belo Horizonte, MG, Brasil), Sandhi Maria Barreto (Faculdade de Medicina-Hospital das Clínicas - UFMG, Belo Horizonte, MG, Brasil), Roberta Carvalho Figueiredo (Universidade Federal de São João Del Rey, Divinópolis, MG, Brasil)

BACKGROUND

The efficacy and relative safety of statins are well established, but they have been associated with muscular problems, ranging from pain and weakness to rhabdomyolysis. The objective was to investigate the association of statin use with muscular pain and weakness, according to type, intensity and duration of use and the modification of this association by hypothyroidism, altered liver function and use of drugs known to interact with statins in a heterogeneous sample of Brazilian adults.

MATERIALS AND METHODS

A cross-sectional study was conducted using baseline data from ELSA-Brasil Musculoskeletal cohort, an ancillary study of the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). Those providing data on statin use and pain and/or weakness, and without rheumatoid arthritis or lupus, were included. Pain was defined as pain, discomfort or stiffness in the last seven days in the lower back or hips/thighs. Five-times sit-to-stand (FTSTS) and handgrip tests were used as proxy for muscle weakness (i.e. greater times in FTSTS and lower grip strength). Statin users were identified by self-reported statin use in the two weeks preceding the interview. Multivariate logistic (pain) and linear (muscle weakness) models; adjusted for age, sex, education, BMI, physical activity, and analgesics/anti-inflammatory use (for pain); were used to test associations. Additive interaction factors were included in the final models to test the modification effect of hypothyroidism, altered liver function and drugs that interact with statins in the association between statin use and muscular pain and weakness.

RESULTS

2,843 participants (55.9 ± 8.9 years; 52.5% women; 21.0% current statin users) were included. After adjustments, associations were only observed for statin use and pain in the hips/thighs among those using the drug for <1 year [OR=2.14; 95%CI=1.29-3.55] and between atorvastatin use and longer times on the FTSTS test [$\beta=0.5$ 95%CI=0.4-1.3], both compared to non-users. There was no indication of additive interaction of hypothyroidism, altered liver function or use of drugs with statins and lower back or hips/thighs pain.

CONCLUSION

Our study provides evidence for differential effects of the type and duration of statin use in the occurrence of muscular problems, what may indicate the need for considering individualized risk-benefit evaluations to guide clinical decision-making. This observational study provides results that may be useful in identifying a possible efficacy-effectiveness gap and consequently in the generation of hypotheses to be incorporated into future randomized clinical trials. The study was supported by the Brazilian Ministries of Health (DECIT) and of Science and Technology (FINEP/CNPq) and CAPES.