

Daytime sleepiness provides red flag for cardiovascular disease

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Clinicians should be alert to patients reporting "excessive" day time sleepiness (EDS), says the European Society of Cardiology, after a French study found healthy elderly people who regularly report feeling sleepy during the day have a significantly higher risk of dying from cardiovascular disease.

The Three City study, published in *Stroke*, by the American Heart Association (Thursday, February 26), found that elderly people who reported excessive day time sleepiness have a 49 % relative risk increase of cardiovascular death (from cerebrovascular disease, myocardial infarction and heart failure) , compared to those who do not report sleepiness.

"Based on this study asking patients the simple question of whether they feel sleepy during the day, is a useful way of identifying a subgroup of elderly patients at higher risk of cardiovascular disease who require a more thorough follow up," said Professor Guy DeBacker, from the Division of Cardiology at the University of Gent, Belgium, and former chair of the European Society of Cardiology Joint Prevention Committee.

Professor Torben Jorgensen, from the Research Centre for Prevention and Health, Glostrup, Denmark, commented: "The study offers the opportunity to practice prevention by investigating the underlying causes of patient's sleep problems, and then introducing lifestyle changes with the intention of preventing later cardiovascular complications."

The Three City study represents the largest yet investigation exploring the prospective association between EDS and mortality in the community dwelling elderly, and the only study yet to have been conducted in Europe - all the other studies were undertaken in North America. Criticisms of the study include a low responder rate (37%) that could introduce an element of bias, and the fact that it lacked objective measures of day time sleepiness (such as polysomnography readings), instead using self reported patient responses.

"The subjects with EDS were less educated and had a lower income so there were differences between the two groups in "socioeconomic status", which was not accounted for in the multivariate analysis. SES is a strong independent predictive factor for total and for cause specific mortality, and it might be that the difference between the two groups is just the effect of socioeconomic differences," said DeBacker.

Both DeBacker and Jorgensen say the results are "hypothesis generating", and that the data needs to be confirmed in other large scale studies in different populations before any changes should be made to existing guidelines.

"Overall the study population had a particularly low number of cardiovascular deaths, suggesting that the French paradox may be in operation. We need to be asking identical questions to different populations to see if we still get the same effect," said DeBacker.

Jorgensen added that he would like to see future trials where EDS patients were randomised to receive sleep interventions or not, to see if cardiovascular complications might be prevented.

Three-City Study

The Three-City Study led by Jean-Philippe Empana from Inserm, (the

French Public Institute on Health and Medical Research) and colleagues followed 9,294 community dwelling people aged over 65 (who did not live in nursing homes or other care facilities). In face to face interview, participants were asked if they had never, rarely, regularly or frequently experienced excessive sleepiness during the day. People diagnosed with dementia at baseline were excluded, providing an overall study population of 8,269 people.

Investigators found even after adjusting for other risk factors,(such as age, gender, body mass index and previous cardiovascular disease), people who experienced excessive day time sleepiness had a 49 % increase in relative risk of cardiovascular death, and a 33 % increase in the relative risk of overall death.

Earlier studies have suggested that atherosclerosis might mediate the association between EDS and cardiovascular death, and that EDS might be associated with sympathetic tone activation.

However, when investigators undertook ultrasound examination of the carotid artery in two-thirds of participants, they found no difference in carotid plaque burden between people with and without EDS. Additionally resting heart rate, a simple marker of increased sympathetic tone activation, was no different among people with or without EDS.

Such data, say the authors, leaves them unclear as to whether sleep complaints are a symptom of underlying cardiovascular disease or whether sleepiness triggers or worsens disease.

"These data may have clinical implications adding to the body evidence that EDS is not a benign but rather an important risk marker for midterm mortality in community dwelling elderly," they conclude, adding that simple questionnaires incorporating questions on sleeping patterns should become part of routine examinations in the elderly.

More information: Excessive Daytime Sleepiness is an independent Risk Indicator for Cardiovascular Mortality in Community Dwelling Elderly. The Three Cities Study. JP Empana, Y Dauviliers, JF Dartigues et al. Stroke 2009; 40:00-00. 1-6

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