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Contact:
The Menopause Society
Ella Adams (eadams@fallsandco.com)
Phone: (216) 696-0229

The Menopause Society™
Leading the Conversation

Timing of Nocturnal Hot Flashes May Affect Risk of Heart Disease for Perimenopausal Women

New study suggests a greater hot flash burden during the second half of the night when disruptions to REM sleep can increase risk of developing cardiovascular disease

CLEVELAND, Ohio (Sept 10, 2024) –Nocturnal hot flashes are disruptive regardless of when they occur during the night. A new study suggests that more hot flashes occur during the second half of the night when more REM sleep typically occurs and when such disruption has a greater chance of increasing the risk of heart disease. Results of the study will be presented at the 2024 Annual Meeting of The Menopause Society in Chicago September 10-14.

Nocturnal hot flashes are one of the more common symptoms for women around the transition to menopause. Perimenopause is the time in a woman's life before her final menstrual period and when hormone levels decline, causing the start of irregular periods and hot flashes, as well as other menopause symptoms. Perimenopause is also a time when the risk for cardiovascular disease increases significantly, perhaps due to fluctuating hormone levels.

Estrogen, for example, which declines during this time of life, helps to keep blood vessels open and relaxed. It also controls cholesterol levels and reduces the risk of plaque buildup in arteries. Declining estrogen levels during perimenopause and menopause can make the inside of the blood vessels vulnerable to plaque buildup in arteries, increasing the risk of stroke, heart attack, and coronary heart disease.

Disruptions to REM sleep (which is known as the deepest sleep when dreams typically occur) can also lead to an increased risk of developing heart disease. It is well-documented that the majority of REM sleep occurs in the second half of the night and that thermoregulation is reduced during REM sleep. To date, however, more evidence is needed to determine whether most hot flashes occur during the first or second half of the night.

Understanding when hot flashes occur during sleep may shed light on the consequences for the risk of cardiovascular disease. That's why researchers in this new study involving nearly 60 participants wanted to identify if there were differences in objectively measured hot flashes in the first vs. second half of the night in perimenopausal women. Participants were healthy, perimenopausal women aged 43-54 who were free of heart disease and who were not taking hormone therapy or other medications that influence hot flashes.

What they found was that 41% of total hot flashes occurred during the first half of the night while 59% occurred in the second half. Hot flashes were objectively measured via sternal skin conductance. These results support the researchers' hypothesis that more hot flashes would occur in the second half of the night with greater ties to cardiovascular disease.

“This is preliminary data and on a small sample,” says Dr. Sarah Witkowski, whose lab at Smith College in Massachusetts led the study. “More research is needed to evaluate the association of hot flashes with sleep disruptions and how they may impact subclinical cardiovascular risk around the transition to menopause.”

More detailed results will be discussed at the 2024 Annual Meeting of The Menopause Society as part of the presentation entitled “Potential Implications for Cardiovascular Disease in Perimenopausal People: Investigating Differences in Nocturnal Hot Flashes in the First vs. Second Half of the Night.”

“The results of this small study are interesting as hot flashes are one of the most common symptoms of menopause,” says Dr. Stephanie Faubion, medical director for The Menopause Society. “Further research into the potential association between sleep disruption and an increased risk of developing cardiovascular disease will be important to women and their healthcare professionals.”

Dr. Witkowski, her students who were involved in the research, and Dr. Faubion are available for interviews prior to and during the Annual meeting.

For more information about menopause and healthy aging, visit the newly redesigned www.menopause.org.

The Menopause Society (formerly The North American Menopause Society) is dedicated to empowering healthcare professionals and providing them with the tools and resources to improve the health of women during the menopause transition and beyond. As the leading authority on menopause since 1989, the nonprofit, multidisciplinary organization serves as the independent, evidence-based resource for healthcare professionals, researchers, the media, and the public and leads the conversation about improving women’s health and healthcare experiences. To learn more, visit menopause.org.