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Cognition and hot flashes: a scientific update

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This presentation is a review of our studies suggesting that vasomotor symptoms (VMS; hot flashes and night sweats) may be associated with cognition and brain function in midlife women. VMS are the hallmark symptom of the menopause. There has been a long-held view that VMS might contribute to memory problems indirectly by disrupting sleep. In this view, it is the poor sleep that is the proximal contributor to memory dysfunction, not the VMS per se. Although intuitive, evidence supporting that view is quite scarce; indeed a number of studies have shown no association between VMS and cognitive function. In a series of investigations we have examined the association between cognition and physiologic VMS measured with ambulatory skin conductance monitors. Our findings demonstrate an association between these objectively measured VMS and memory performance in women with moderate-to-severe VMS. Specifically, the findings showed that the greater the number VMS the worse the memory performance. Stronger evidence of an association between VMS and memory came from an intervention study with stellate ganglion blockade showing that the magnitude of improvement in VMS after the intervention was strongly correlated with the magnitude of improvement in memory. Physiologic VMS – but not reported VMS - have been shown to be associated with the functioning of the brain at rest, with alterations in the connectivity between the hippocampus and other brain regions. Physiologic VMS are also associated with ischemic burden on structural magnetic resonance imaging (MRI) scans. Again this association was not observed with reported VMS. Although sleep was associated with memory performance, sleep did not account for the association between VMS, cognition, and neuroimaging outcomes. These data suggest that VMS may contribute to declines in memory that women experience as they transition through the menopause and that these effects are not due to VMS-related sleep dysfunction.

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