

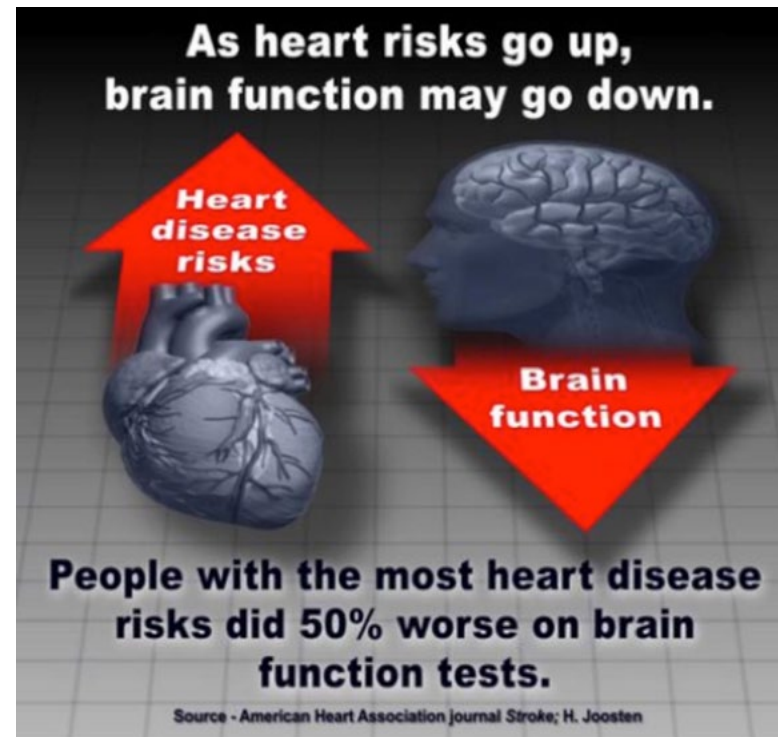
Cardiogenic Dementia with a Link to Postmenopausal Women



Sana Chams
Medical Student, AUBMC



“With something like cancer, there is a feeling that you can fight it in some way or control your response to it, but with dementia there is the fear of losing control of your mind and your life.”- As quoted by the English actor Kevin Whately, **“dementia can be debilitating to one’s life where it’s not just a problem of memory but there’s reduction in one’s ability to learn, reason, and recalling past experiences”**. Dementia can be attributed to Alzheimer and ageing but more recently, and with increasing research, there has been a link between cardiac diseases and cognitive impairment, namely dementia. Moreover, several recent studies are linking cardiac diseases and dementia with postmenopausal women mainly, taking into consideration the hormonal changes and differences among gender.



The term “cardiogenic dementia” was first introduced in 1977 by an editorial in The Lancet, suggesting that cardiac disease could serve as a valid cause for dementia. (1) However, at that time there was no sufficient evidence to support this relation since dementia and cardiac diseases tend to co-occur especially in the elderly. Nevertheless, with the ongoing research, there’s a stronger relation between cardiac diseases and a subsequent decline in cognitive functions namely, dementia.

The pathogenesis behind this link can be confined to two main theories: cerebral microembolism and hypoperfusion. The cognitive impairment attributed to cerebral microembolism is most likely due to left ventricular dysfunction as stated by an article in the European Journal of Heart Failure. (2) The same article stated as well that the reduced cerebral perfusion secondary to low cardiac

output mainly in cases of heart failure also contribute to cognitive impairment.

In the general elderly population, there are sufficient amount of studies pointing out at the association of cardiovascular risk factors and cognitive dysfunction. The study done by Beason-Held et al., used the Framingham Heart Study group Cardiovascular disease Risk Profile (FCRP) score and concluded that, “Higher baseline FCRP scores were associated with accelerated longitudinal decline in CBF in orbitofrontal, medial frontal/anterior cingulate, insular, precuneus, and brain stem regions” (3) thus, regions that are mainly involved in higher-order cognitive processes. Subclinical brain injury is theoretically attributed to the systemic hypoperfusion which is prevalent in cardiovascular diseases. (4) This theory was studied by Jefferson et al. where they assessed cardiac index along with brain MRI and used the neurophysiological protocol that includes several tests in order to assess the cognitive functions included in the following 5 domains: verbal memory, visuospatial memory, verbal learning, executive functioning/information processing and language/object recognition. In another study carried out by Newman et al. the results also support the relation between cardiac diseases and dementia where, “Older adults with CVD other than stroke had a higher risk of dementia and AD than did those without CVD.”(5)

These studies were all examined on both elderly males and females, however, very few recent studies emphasized on the relation of cardiac diseases and dementia in postmenopausal women mainly. In a study performed by Haring et al. which constituted a population of 6455 cognitively intact postmenopausal women, “Women with CVD tended to be at increased risk for cognitive decline compared with those free of CVD”(6) and mainly women with myocardial infarction being at the highest risk. Accordingly, a second recent study by Miller et al. stated that even though cardiovascular diseases occur 10 years earlier in men, however in women after menopause these diseases increase exponentially. Also, treating cardiovascular diseases such as hypertension is harder in women where it is less likely to reach normotensive levels in women, suggesting that sex differences are behind the pathophysiologic processes. (7) These differences can be highly attributed to the changing hormonal levels in women at menopause, mainly the lowered levels of estrogen.

These findings lead us to think highly of the importance

of hormone regulation. **That is why it is strongly recommended to start menopausal hormone therapy at a time close to menopause in order to reduce the risk of cardiovascular disease and hence the cognitive decline.**

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