

Cognitive Changes in Menopause

Laila Arjumand Banu

ABSTRACT

During menopause, women undergo many changes in their mind and body, building a sense of insecurity. Though the main symptoms are Hot flushes, osteoporosis, cardiovascular and urogenital, but the cognitive functions, like speaking tasks, processing of unfamiliar information, complex problem solving, delayed recall, mental flexibility, and perceptual manipulation tasks, tend to decline. This decline is lesser in women, who have been more mentally and physically active in their youth.

Keywords: Menopause, Cognitive changes, Alzheimers, HRT.

How to cite this article: Banu LA. Cognitive Changes in Menopause. J South Asian Feder Menopause Soc 2013;1(2):80-81.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

The menopause is a part of a woman's life whether natural or surgical. The menopausal symptoms appear when there is deficiency of estrogen. The main changes of menopause is hot flush, cardiovascular changes, osteoporosis, urogenital atrophy and the cognitive changes—mood changes.

In menopause, there are factors that cause insecurity, fear of losing attention from husband due to physical changes, forgetfulness, intolerance and irritability. There are many studies which conclude that estrogen has definitive role on hippocampus, which deals with mood and behavior. The intellectual changes which are age related and are clinically significant, depends on individual and type of function being examined.

The cognitive function changes, like speaking tasks, processing of unfamiliar information, complex problem solving, delayed recall, mental flexibility, and perceptual manipulation tasks are individualized. Those individuals who performed at highest level (99th percentile) in their youth, in a variety of cognitive domain, tend to decline relatively less throughout their lifestyle.

The individuals who performed at lower levels (2nd percentile) exhibit marked and dramatic decline. Successful aging means:

- Low probability of disease and disease-related disability
- High cognitive and physical functioning
- Active engagement with life-like maintenance of interpersonal relationship and productive activities.

A menopausal lady with cognitive disorder evaluated by detailed history—medical, family, social, occupational, educational, cultural and medication, drug abuse. Special history, like any psychiatric problem, neurological disorders, any history of head trauma, diabetes mellitus and HIV. Physical examination includes general examination along with neurological evaluation, vascular illness and infection, psychological and emotional distress. Sometimes there may be history of violence, so careful examination is needed. It is known that 28% couple experience violence at some point whereas 16% couple experience it in a given year. Any family history of dementia, Huntington's disease, Schizophrenia should be noted. Any social adaptation, like educational level, carrier and hobbies, socioeconomic and cultural background and changes in marital relationship should be asked. Women's own psychiatric history should be thoroughly evaluated.

One most important aspect of cognitive changes is depression. Menopause related depression is defined by the onset of depression in association of menopause or increased FSH level. For depression, careful assessment of the clinical picture is done. Early dementia should be ruled out. Late onset depressions have enlarged ventricles and decreased brain density. Depression is more common in more than 65-year-old persons, and it is the most common emotional problem among elderly patients, precipitated by either a traumatic loss of a family member or after retirement. Evaluation of depression can be done by measuring depression by the Beck Depression Inventory. The woman checks 21 four choice statements—sadness, pessimism/discouragement, sense of failure, dissatisfaction, guilt, expectations of punishment, self-dislike, self blame, suicidality, tearfulness, irritability, social withdrawal, indecisiveness, unattractiveness, work difficulty, sleep disruption, fatigue, appetite loss, somatization, diminished libido. Weissman suggest a peak in the onset of depress illness during the perimenopausal years (aged 40-50 years). The rate of change of hormone levels and their indirect effect on neurotransmitter, neuroendocrine or circadian system that lead to mood alteration.

Effect of HRT on Depression

HRT has been approved for the prevention of osteoporosis, CVD and postmenopausal genitourinary problem. Early

studies have suggested that HRT may be useful for treatment of depression and cognitive changes associated with the menopause.

HRT

HRT most commonly consists of estrogen and progesterone administered in a cyclical manner. Estrogen not only acts as a serotonergic and cholinergic agonist but also selectively increase norepinephrine in the brain. Recent works suggest that estrogen augmentation to antidepressant medication may benefit women with menopausal depression.

Estrogen deficiency may be a cause of memory loss in postmenopausal women though Rancho Bernardo Study does not support the idea. Randomized controlled trials support the conclusion that HRT improves cognitive function in postmenopausal women. The rationale for estrogen treatment for Alzheimer's disease is based on preclinical, epidemiological and preliminary treatment studies. Estrogen receptors are present in hippocampus, an area well-known to be associated with memory and learning. Estrogen increases cerebral blood flow to hippocampus, basal ganglia and cerebellum.

Estrogen acts through receptors, present in forebrain nuclei and cholinergic neurons affected in Alzheimer's disease. Estrogen also has antioxidant properties by which it also improves Alzheimer's disease.

Estrogen may exert antihypertensive effects in premenopausal women—it increases both cerebral blood flow and cerebral glucose utilization.

Paganini-Hill and Henderson performed a case controlled study within a large prospective cohort of women in a retirement community—result showed that ever users of HRT had a 30% decreased risk of developing Alzheimer's

disease compared to never users with a positive relationship between doses and duration.

CONCLUSION

Large case controlled and cohort studies will be required to clarify the impact of other agents on risk of developing Alzheimer's disease in later life (OCP, antiestrogens). Estrogen is effective when used as augmenting other psychopharmacological interventions.

BIBLIOGRAPHY

1. Bachman DI, Wolf PA, Linn RT, et al. Incidence of dementia and probable Alzheimers disease in a general population: The Framingham Study. *Neurology* 1993;43:515-519.
2. Benedicts KB, Nacost DB. Dementia and depression: a framework for addressing difficulties in differential diagnosis. *Clin Psychol Rev* 1990;10:513-517.
3. Glass TA, Seeman TE, Herog AR, Kahn RI, Berkman LF. Changes in productivity in late adulthood: MacArther Studies of Successful Aging. *J Gerontol Soc Sci* 1995;50B:S65-76.
4. Koenig HG, Blazer DG. Mood disorders and suicide. In: Birren JE, Sloane RB, Cohen GD, editors. *Hand Book of Mental Health and Ageing*. 2nd edn. San Diego, CA: Academic Press 1992: 379-407.
5. Neale JM, Oltmanns TF. *Schizophrenia*. New York: John Wiley and Sons 1980.
6. Sherwin BB. Cognitive assessment of postmenopausal women and general assessment of their mental health. *Psychopharmacol Bull* 1998;34:323-326.

ABOUT THE AUTHOR

Laila Arjumand Banu

Joint Secretary General, Bangladesh Menopausal Society, Dhaka Bangladesh

Correspondence Address: Apartment: A-5, House No: 35, Road-12/A, Dhanmondi, Dhaka-1205, Bangladesh, e-mail: laila04@gmail.com