Receptive Functions at Childbearing Age, Perimenopause and Postmenopause

Semso Rosic¹, Muhamed Rosic², Remzo Samardzic³, Sulejman Kendic⁴

Dispensary for Women’s Health, Health Care Center, Cazin, Bosnia and Herzegovina ¹
Primary Health Care, Health Care Center, Cazin, Bosnia and Herzegovina ²
Internist Consultative Service, Health Care Center, Cazin, Bosnia and Herzegovina ³
School of Health Studies, University of Bihac, Bosnia and Herzegovina ⁴

Corresponding author: Semso Rosic, MD, PhD. Health center Cazin, Cazin, Bosnia and Herzegovina. E-mail: rosic@gmail.com

ABSTRACT
Introduction: Receptive functions represent higher mental processes by which people carry out normal daily living tasks. The specificity of these functions is that they stimulate specific physiological functions in the body. They are reflected in the ability to select, classify and integrate the information received.

Material and Methods: We performed an assessment of visual-perceptual abilities by Purdue nonverbal test (PNT-TV) in 135 patients. Patients are classified into three age groups of 45 patients. The first group consisted of patients of childbearing age (25-39 years), second group of patients in perimenopausal age (40-54 years) and a third group of postmenopausal patients (≥55 years).

Results: The distribution of the results are statistically different between groups, suggesting that at the onset of menopause there is a decrease of visual-perceptual abilities in patients (Friedman test was significant with p<0.001).

Conclusion: By the distribution of the results of our study, and the statistical significance of Friedman’s, it can be concluded that patients who enter menopause have tendency to decrease of receptive functions.

Key words: receptive functions, fertile age, perimenopause and postmenopause.

1. INTRODUCTION
Receptive functions are higher mental processes by which people carry out normal daily life tasks (1). The specificity of these functions is that they stimulate specific physiological functions in the body. They are reflected in the ability to select, classify and integrate received informations (2).

At the cellular level receptive functions depend primarily on communication between neurons, or the activity of specific signaling molecules called neurotransmitters. Studies show that estrogen directly, through intracellular receptors (genomic) and membrane receptors (non genomic), act on neurotransmitters and receptors and alter the level of neurohormones compensation. Estrogens prevent decline in cognitive function by modeling blood flow and activity in key brain areas, including the area responsible for attention as well as verbal and spatial memory (3).

As the estrogen level decreases with age, so does the level of neurotransmitters in the key areas of the brain, which can affect the receptive functions. In our study, we measured the visual-perceptual ability in patients of childbearing age, perimenopausal and postmenopausal women, which means the ability of visual perception of space and elements of space, spatial relationships and the ability to perform thought-perceptive organization of the observed elements (4).

According to the results of the study, these receptive functions are an important factor that predisposes the quality of life in older age.

2. GOAL
The goals of this study were to assess the visual-perceptual abilities of female patients of childbearing age, perimenopausal and postmenopausal.

3. MATERIAL AND METHODS
We used stratified sample of 135 respondents. The baseline sample was divided into three groups. The first group consisted of patients of childbearing age (25-39 years). The second group consisted of patients in perimenopausal age (40-54 years). The third group consisted of female patients in postmenopausal age (≥55 years). The survey was conducted as part of regular medical examinations of the patients. Measurement of receptive functions was performed using the Purdue nonverbal test (PNT).

PNT has standardized norms for certain age groups. Unweighted scores, that respondents achieved on PNT are evaluated according to norms for specific age group used in the PNT standardization (5). Solving of the test lasted for 25 minutes. The total score is the sum of correct solutions.

For every age group of women is made the distribution of results. At the end by the Friedman’s test are tested the distribution of results of all three groups of respondents.

4. RESULTS
The results are presented in tables and figures.
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of cognitive functions related to aging, while estrogen supple-
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used HRT, had improvements in verbal memory, alertness,
concluded that women with menopausal symptoms, which
the use of HRT in dementia prevention (8). The researchers
be the most effective in preventing cognitive deterioration (7).

Also measured are concentrations of bioavailable estradiol and
help of Mini-Mental Status Examination (MMSE) test, 425
less prone to decline of cognitive functions (6). With the

Also measured are concentrations of bioavailable estradiol and
testosterone, unbound to proteins in the blood with comparison
of their levels of estrogen. Women with higher concentrations
of free estradiol had a 70% lower risk for decline in cognitive
function than women with a low concentration of free estra-
diol. This suggests that the estrogen should be able to cross
the blood–brain barrier in order to have a beneficial effect. Since
some progestogens facilitate the ability of free estrogen to cross
the blood–brain barrier, a combined preparations of HRT may
be the most effective in preventing cognitive deterioration (7).
LeBlanc and colleagues in the comprehensive meta-analysis
and systematic review gathered data from 29 studies exploring
the use of HRT in dementia prevention (8). The researchers
concluded that women with menopausal symptoms, which
used HRT, had improvements in verbal memory, alertness,
judgment, and the motor speed. McEwen and colleagues in
their study also suggest that HRT may prevent deterioration
of cognitive functions related to aging, while estrogen supple-
ment may protect the hippocampus and other brain areas
associated with dementia (9). Weight of data from randomized,
controlled studies in the region on estrogen and cognition in
postmenopausal women speaks how estrogen protects verbal
memory, while less consistent observational studies showing a
greater diversity of their impact.

With the worldwide growth of elderly population, raising are
concerns about the devastating effects of Alzheimer’s dementia
(AD). Observational studies have suggested that estrogens may
delay or prevent the onset of AD if treatment is begun in the
eye period of menopause. Tang and colleagues studied 1124
older women, mean age 74.2 years, searching for cognitive im-
pairment over five years. They concluded that the occurrence
of AD was significantly later in women taking estrogen than
in those who did not (10). Relative risk for AD was six percent
lower in women receiving HRT and sixteen percent higher in
women who had not use it. In women who used estrogen for
more than a year reduction in the risk of disease was greatest.
Barbara Sherwin concludes that, given the evidence collected,
there may be a critical “window” of time to initiate treatment
with estrogens, immediately upon the occurrence of perimen-
opause, which can increase their maximum potential against
cognition deterioration (11). Early commencement and with
the lowest effective dose of women may have a protective effect
of estrogen with a very low risk of treatment.

6. CONCLUSIONS

According to the distribution of results in our study, and the
statistical significance of Friedman-test, it can be concluded that
in patients who enter menopause exist a tend toward decrease
of receptive functions. Given the evidence collected, there is a
critical “window” in time for receptive function decrease pre-
vention. Immediately upon the occurrence of perimenopause,
estrogen use may increase their maximum potential in the fight
against the deterioration of these functions. By early application
of the minimum effective dose of estrogen, women may have a
protective effect, with a very low risk of treatment.

CONFLICT OF INTEREST: NONE DECLARED

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