Graziottin A.
Menopause and inflamm-aging: facts and therapeutic options
Abstract of the lecture presented at the 2012 Congress of the Sri Lanka College of Obstetricians & Gynecologists (SLCOG),
Sri Lanka, July 27-29, 2012

Menopause and inflamm-aging: facts and therapeutic options

Alessandra Graziottin M.D.
Director, Center of Gynecology and Medical Sexology
H. San Raffaele Resnati, Milan, Italy
Chairman and Founder, Alessandra Graziottin Foundation for the cure and care of pain in women Onlus

Background

The process of aging in characterized by an increase of pro-inflammatory cytokines and other inflammatory molecules, in men and women: leading to the new wording "inflamm-aging", recently coined. Inflammation is considered the common denominator that triggers cancers, neurodegenerative diseases such as Alzheimer's and Parkinson', and cardiovascular diseases. The question is: is menopause (also) an inflammatory condition, that worsen the general inflammatory trend typical of the aging process? If yes, what is the impact of fluctuations and loss of estrogens, progesterone and androgens on local and systemic inflammatory/degenerative processes? Mast-cells are the director of the inflammatory and pain orchestra: what is the link between sexual hormones changes and mast cells activity, after the menopause?

Aim of the presentation

To analyze current evidence on the association between menopause, increase of inflammatory molecules, aging and pain, and suggest key therapeutic options.

Method

Review of the literature and clinical experience.

Results

Estrogens fluctuations are credited to trigger mast cells degranulation, increasing the release of inflammatory molecules. This is a marker of progressive functional and then anatomic changes in organs and tissues, with substantial changes of tissues' cytoarchitecture, leading to progressive degenerative processes and loss of functional competence. During and after the menopause, a definite increase in inflammatory markers has been documented in osteoarthritis (that triples after the menopause), in bone resorption leading to osteopenia /osteoporosis, in cardiovascular diseases and aging, in obesity, in dyspareunia, and also in depression, until recently considered a non inflammatory condition. New evidence indicates that approximately one-half of the women with depression reported pain of mild intensity. Pain intensity was significantly correlated with the severity of depression ($r^2 = 0.076$; $P = 0.04$) and tended to be correlated with the severity of anxiety, ($r^2 = 0.065$; $P = 0.07$), and the number of depressive episodes ($r^2 = 0.072$; $P = 0.09$). Other researches re-read depression as a systemic disease and a systemic inflammatory conditions, where flooding of the brain with inflammatory molecules may contribute to the complex depressive symptomatology. It also predicts a higher risk of neurodegenerative diseases. Solid evidence supports as well the inflammatory basis of cancers. To reduce the level of the "inflamm-aging" after the menopause two main lines of interventions should be recommended: healthy lifestyles and hormone replacement therapy, when appropriate.

Conclusions

Increase of inflammatory molecules and pain is documented is different conditions that worsens across and after the menopause. The presentation will focus first on the new evidence of **menopause as an inflammatory disease** and

on the relationship between sexual hormones changes, mast cell activity, inflammation and pain; second on the evidence supporting the lifestyles that reduce the inflammatory level, and on the specific anti-inflammatory role of sexual hormones, both at systemic and local level.