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Editorial

Immuno-Metabolic Perspectives in the Care of Climacteric Women

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Cardiovascular diseases (CVD) continue to be one of the main causes of death in the population. "Middle-aged" people (between 45 and 64 years old) and elderly people (> 64 years old) shoulder most of the burden of CVD. In this sense, it is imperative to understand the mechanisms underlying its pathogenesis in an attempt to develop efficient therapies and reduce the burden of CVD [1].

Much attention has been paid to the biological role of sex and immune-metabolic status in relation to CVD predisposition and response to therapy. This is due to the fact that women generally have a lower risk of developing CVD compared to men of similar age only until menopause [1,2], leading to the hypothesis that the menopausal transition contributes to the increased risk of CVD [3]. The menopausal transition is marked by the aging of the hormonal axis [4], gonadal response leading to immune-metabolic imbalance which may result mainly in cardiovascular implication [5].

Heat shock proteins (HSPs) are related to atherosclerotic processes [6]. Preliminary findings on the relationship between metabolic abnormalities and increased levels of HSPs in menopausal women have highlighted the early involvement of HSPs in the development of cardiovascular disease. In particular, heat shock protein 27 (HSP27) levels in atherosclerotic plaque tissue are decreased in patients compared to healthy patients [10-12].

HSP27 preserves cellular homeostasis under various stress conditions primarily for the pathogenesis of atherosclerosis [13]. Since the discovery of the estrogen receptor beta relationship (ER-β) [14,15], several studies have reported a reduction in the HSP27 protein with the progression, complexity and instability of the atherosclerotic plaque [13,16].

The relationship between the immune-metabolic profile in post-menopause levels of HSP27 and cardiovascular diseases, constitute individualized and specific perspective of great scientific interest, enabling better targeting and effectiveness in diagnostic and therapeutic proposals. However, the exact molecular mechanisms of how these processes interact with each other are not completely known.

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