

Personality Disorders and Coronary Atherosclerotic Plaque: A New Perspective

PEDRO FORCADA¹

The work of Suarez-Bagnasco et al, published in this issue of the Journal, (1) depicts not only an innovative and original contribution but has also considerable clinical value. With the simple language of specialists in the field of neuroscience and psychoimmunodocrinology, they characterize different personality disorders and their relationship with the presence of coronary atherosclerotic plaque, presenting hypotheses on the possible pathophysiological mechanisms involved.

To date, much has been written about the relationship between certain personality types and diverse cardiovascular complications and patient outcomes. However, even though the evidence has been clearly significant in some studies, the relationship between psychosocial factors and cardiovascular disease is rarely accepted in routine practice as a scientifically sustainable argument. Usually, it is difficult to accurately assess psychological illness as a defined noxa, or the consequences at this level of psychosocial aspects, with a pathophysiological basis enabling its correlation with cardiovascular disease. Today, there is proven evidence that these arguments are becoming less valid. (2)

Currently, concepts such as allostasis, allostatic network and allostatic load have established a connection between neuroscience and cardiology, as the allostatic network is a supra-system linking the autonomic nervous system, the hypothalamic-pituitary-adrenal axis and the immune system with the cardiovascular system as one of its effectors. (3) These are familiar areas to the cardiologist who can relate them to each other from a different perspective and thus understand the association between the development of risk factors such as metabolic syndrome or atherosclerosis with the central nervous system and its responses to stress, and how different psychological disorders or psychosocial aspects impact at the cardiovascular level. (4, 5) (Figure 1)

In this sense, the study of Suárez-Bagnasco et al is a pioneering work that focuses on the early stages of two processes: personality disorders and coronary atherosclerosis prior to the cardiac event.

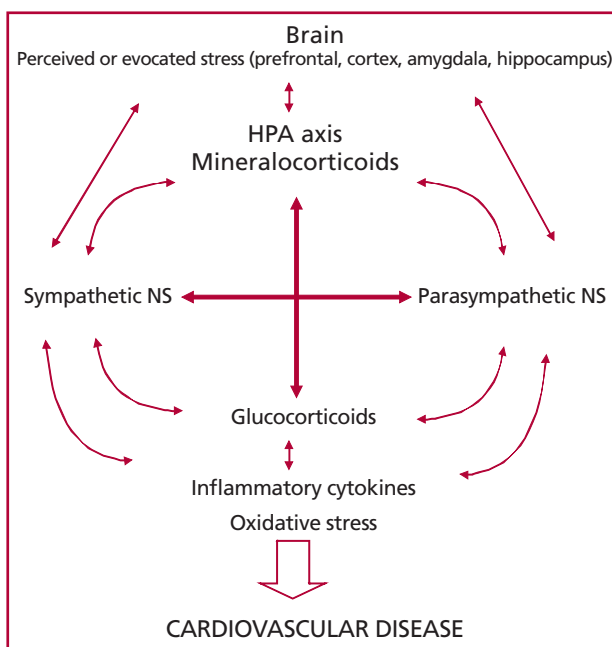


Fig. 1. The allostatic network, is a supra-system relating the ANS, the hypothalamic-pituitary-adrenal (HPA) axis, and inflammation and oxidative stress through reciprocal modulation mechanisms, in this case, in association to the development of cardiovascular disease. When it is dysfunctional, allostatic load is generated.

BACKGROUND

In 1768, William Heberden makes a bright first description not only of angina pectoris but also includes the personal characteristics of subjects with this, for him, novel pathology, coronary disease (arguably the first detailed description of type A personality). (6)

However, we now know that not only hypervigilant, self-demanding, competitive and aggressive individuals, defined as type A personality, are candidates for cardiovascular disease but also those with anxious personality and/or depression, excessive dependence or even those with marked hostility and angry responses (anger-hostility complex).

During the last three decades of the twentieth century, type A personality and its relationship with over-

all cardiovascular disease and coronary heart disease in particular has been specially analyzed.

More recently, associated to the sociocultural changes of a globalized and hyper-connected society, there is a higher proportion of increasingly isolated and overdemanded subjects, carrying type D personality (for distress), which characteristically present introversion, anxiety, fear, and are even prone to alexithymia. This personality type is also observed in a large proportion of patients with cardiovascular disease, disputing the supremacy with type A personality. In conclusion, the personality profiles related to cardiovascular disease have been determined with increasing levels of accuracy. (7)

Finally, it is impossible to ignore the importance of late stage depression among cardiovascular risk factors and disease development. It is even possible to draw a parallel between the cardiovascular continuum and a "continuum" from personality disorders, phobias, post-traumatic stress and depression as final stage. (8)

There has also been an increased risk of events and worse outcome in patients who have pessimistic attitudes, lacking in projects and/or a social or family security network, compared to optimistic subjects with projects or participation in group activities, social networks and support groups. Probably, among the latter are those with higher levels of resilience or with resilience tutors, generally members of the supporting networks.

Resilience is the ability to overcome adversity and even emerge stronger. This concept is not exclusive to the psychological field as there are numerous and complex mechanisms spanning from the molecular and genetic level to the genetic - epigenetics interaction of subjects with the ambiome. Subjects can not only present resilience capacity, but this can be induced or facilitated when facing traumatic or stressful stimuli. (9)

COMMENTS AND OBSERVATIONS

Comments

According to Rozanski et al, the factors that promote atherosclerosis can be divided into two groups: emotional factors and chronic stressors.

Emotional factors mainly include affective disorders such as major depression and disorders associated with anxiety, hostility and anger. *Chronic stressors* are related to the environment and include scarce social support (social support networks such as friends, peer groups, solidarity tasks etc.), low socioeconomic status, work stress, marital stress and overload of caregivers.

Theoretically, it is now quite certain that acute stress can lead to ventricular dysfunction and ischemic events while chronic stress, mainly through metabolic disorders, may lead to the development of atherosclerosis. (7)

This has not only resulted in multiple advertise-

ments and editorials of major cardiology societies worldwide to systematically detect different psychosocial aspects and depression in patients with or without risk factors for cardiovascular disease, but "cardiological conduct" has also emerged as an increasingly developed discipline, better situated in the field of neurosciences than in the field of Cardiology. (10)

Psychosocial aspects have been considered for some time in the Argentine Society of Cardiology (Nijensohn C., 1978) and a timely report on the subject (Psychosocial Issues Commission Report 2001) (11) has been published and incorporated in the recently published Consensus on Cardiovascular Prevention (12). Two years ago, the Psychosocial Issues Board was formed with the idea of incorporating these aspects within the cardiologist's training activities and in the cardiovascular patient assessment, not only as an indicator of cardiovascular risk, but also as an intervention that may bring about risk reduction. There is also an extensive consideration on the subject in the Diagnosis and Treatment of Hypertension Guidelines of the Argentina Society of Hypertension, published a year ago, showing the growing interest in this area of different specialists in cardiovascular disease. (13)

Observations

In this study, the authors deal with two major topics. The first one is leaving the archetypes known as type A or D personality for a description of personality disorders and their characteristics according to a modern classification which has arrived to a consensus between the American and Europe classifications, facilitating their identification during consultation.

The second topic is primary prevention, since these patients with atherosclerotic coronary disease or at risk of developing it were ambulatory patients with no acute pathology (this is inferred, as the work does not explain how many patients had events or previous procedures and the reasons why a multislice CT was requested in asymptomatic subjects).

This new perspective can enrich cardiovascular risk assessment by incorporating in the subject early and permanent elements, such as personality disorders, which are added to the assessment of psychosocial aspects, preeminently positioned as indisputable by INTERHEART and INTERSTROKE study results, along with other numerous large studies (MR FIT, WHI, etc.).

It would have been important to add a control group of people without cardiovascular disease to estimate, rather than compare with patients without plaque, what is the magnitude of personality disorders and their profile in cardiovascular patients with respect to patients who do not have this disease.

Another element to consider is the adjustment for sex and age as well as by major risk factors, which the authors claim are different, as these would be important confounders in the regression equations when accurately estimating the strength of the relationship between personality disorders and coronary lesions.

Regarding the low proportion of women reported by the authors, this is the proportion commonly seen in cardiovascular disease studies and it is important to notice that the proportion is probably not the most important fact but that the severity of cardiovascular disease in women is higher and consequently so is cardiovascular risk.

Given the marked differences both at the cardiovascular level and psychic mechanisms of man and woman, another interesting consideration would be to analyze by gender the differences in personality disorders linked to cardiovascular disease.

In conclusion, it is an innovative and updated work that provides scientific evidence on the relationship between early stage personality disorders and cardiovascular disease, thus opening the path for further research in these areas.

Personality disorders would be signs of dysfunction in the main and earliest primary interface before stress, and considering its increase in today's society, these findings are a warning to prepare for an approaching psychiatric disease epidemic, especially depression, which could even exceed cardiovascular disease in the following years. What would be most fearsome is the influence upon cardiovascular disease that the increase in stress-related psychiatric disorders could produce.

Conflicts of interest:

None declared.

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