

## ***“Youth Is a Disease that Is Cured with Age”***

*“La juventud es una enfermedad que se cura con los años”*

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George Bernard Shaw

Young people generally assume that they are healthy, do not undergo medical examinations often, and are unaware of their blood pressure levels. According to the 4th National Survey of Risk Factors, published in October 2019, the prevalence of hypertension was 14.8% among individuals aged 18–24, 20.7% among those aged 25–34, and 29% among those aged 35–49. (1) In the RENATA 2 study, conducted between August 2015 and March 2016 and published in 2017, 18.5% of men and 6.9% of women < 35 years had hypertension as well as 37.9% of men and 19.5% of women between 35 and 44 years of age. (2) A relevant fact is that in these age groups of young adults, the prevalence of hypertension is increasing more rapidly than in older people, especially in men and in middle- and low-income countries. (3,4) This could be attributed to factors such as increasing sedentary lifestyles, obesity, alcohol consumption, tobacco use, drug use, and poor diet. In young adults, adherence to adequate treatment and blood pressure control is significantly lower. (5) A recent Finnish publication analyzed a group of 1889 adolescents and young adults who were followed up for 38 years. At the conclusion of the study period, 745 (39.4%) of the subjects had developed atheromatous plaques in their carotid arteries. Multivariate analysis demonstrated a close correlation between systolic, diastolic, mean, and pulse pressure initially recorded and the development of these plaques. (6) These findings confirm the well-established association between the presence of a specific risk factor, its intensity, and the duration of endothelial exposure to that risk factor. Another relevant finding is the confirmation that hypertension is associated not only with arterial remodeling (increased intima-media thickness) but also with the deposition of atheromatous plaques.

In this issue of the journal, researchers from the Favaloro Foundation publish a cross-sectional observational study with prospective follow-up of individuals who underwent cardiovascular evaluation between

January 2017 and December 2023. (7) A total of 6071 participants between 18 and 49 years were included in this analysis (age  $35.3 \pm 9.6$  years, 45.3% female). Of these, 576 patients (9.5%) had systolic blood pressure  $\geq 140$  mmHg, diastolic blood pressure  $\geq 90$  mmHg, or both (HTNg). The characteristics of the HTNg were compared with those of normotensive individuals (CTRLg). Patients were excluded if they had previous HTN, were taking antihypertensive treatment, or had secondary HTN. Subjects in the HTNg were older and had higher values of body mass index and blood glucose, creatinine, total cholesterol, LDL, and triglycerides. These data reinforce the long-standing concept that cardiovascular risk factors are often associated and that identifying one of these factors typically prompts the investigation of the others to determine the overall cardiovascular risk score. On exercise stress test, this group exhibited lower performance and a greater exaggerated hypertensive response to exercise compared to the CTRLg. In addition, the echocardiograms demonstrated higher left ventricular mass index and larger left atrial diameter in the HTNg. Probably, an indeterminate proportion of these patients were unaware they had HTN, as we do not know the medical records of this population. In that case, this would be the first time they became aware of their condition. Furthermore, analysis of the results indicates that target organ damage to the kidney and heart had already occurred at an early age.

This study analyzes a highly selected population made up of individuals who voluntarily attended a prevention program at a cardiovascular center (motivational bias). This decision identifies them as people who are naturally more concerned about their health and, consequently, healthier than the average population. Given their attendance at a private institution, it is reasonable to assume that these individuals possess health coverage and thus belong to a more privileged socioeconomic class (socioeconomic bias). These

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facts contribute to consider it difficult to extrapolate these results to the broader community. The diagnosis of hypertension was made in the context of a single measurement taken as part of a general health check-up, without corroboration by additional methods such as home or ambulatory blood pressure monitoring, as recommended by recent guidelines. (8)

Despite these observations, I believe that this paper presents a novel and valuable incentive to warn the community (particularly the medical community) and underscore the importance of detecting, correctly treating, and adequately controlling hypertension over a lifetime.

#### Conflicts of interest

None declared

(See authors conflicts of interest forms on the website).

#### Ethical considerations

Not applicable.

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