Influences in Obesity

The experimental research article "Losartan and Metformin Prevent Abnormalities in Perivascular Adipose Tissue and in Mesenteric Vascular Bed Prostanoid Release Induced by High-fat High-fructose Diet in Rats" by Hyun Jin Lee et al., published in the Argentine Journal of Cardiology (1) implies a step forward in stimulating further research in a crucial topic. The paper constitutes a healthy attempt to contribute, through pharmacological resources, not only in the known therapeutic actions, but also in the study of those endothelial dysfunctions that could strengthen the basis of non-pharmacological resources to fight against obesity in general, and the metabolic syndrome, clear risk factors for hypertension, ischemic heart disease and other diseases.

Undoubtedly, management of the metabolic syndrome (which affects one out of three adults in the United States) can be approached from a clinical point of view by o non-pharmacological resources, both for the prevention of its components and for reducing its incidence. These resources include promoting the reduction of high-calorie diets, such as refined sugar, flours and fats. This habit must consider the needs for dietary changes due to social and economic problems.

As the incidence of obesity continues to grow, there is an urgent need for effective pharmacological treatment of both the underlying causes and the associated comorbidities. Therefore, understanding the basic biology of the tissues is essential. So far, understanding perivascular adipose tissue in vascular diseases plays a key role in endothelial dysfunction.

Furthermore, the studies carried out to date indicate differences between perivascular and other adipose tissues. Perivascular adipose tissue could be considered different from other adipose tissues, such as brown adipose tissue and white adipose tissue.

White adipose tissue is the major energy store and the largest depots of white adipose are found in subcutaneous or intravisceral sites. Brown adipose tissue is responsible for energy dissipation during cold-exposure and is primarily located in the interscapular region and can also be found interspersed in white adipose tissue.

These three types of tissues also have endocrine functions and play major roles in whole body metabolism especially in obesity and its comorbidities, such as cardiovascular disease. Over the last years, perivascular adipose tissue has emerged as an adipose organ with endocrine and paracrine functions.

Clearly, regular physical training, associated with diet therapy, emotional well-being and circumstances linked to access to employment that impact on personal economic resources, have a fundamental influence on the control of the problem under analysis. The regulatory intervention of the State should be encouraged to create and promote public recreation and gymnastics centers for population sectors lacking labor, food and economic resources.

Juan Albarracín

Former Head of the Department of Internal Medicine, Hospital Presidente Perón, Avellaneda, Buenos Aires, Argentina.

Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

REFERENCES

1. Lee HJ, Álvarez Primo M, Allo MA, Cantú SM, Donoso AS, Peredo HA, y cols. Losartán y metformina previenen alteraciones en el tejido adiposo perivascular y en la liberación de prostanoides del lecho vascular mesentérico producidas por una dieta alta en grasa y sobrecarga de fructosa en ratas. Rev Argent Cardiol 2020;88:25-31.

Rev Argent Cardiol 2019;87:171. http://dx.doi.org/10.7775/rac.v88.i2.17585

Maternal Hemodynamics to Predict Hypertensive Disorders of Pregnancy: Should this be the Outlook?

Hypertensive disorders of pregnancy (HDP) represent a complication that has increased in recent years; it is the second leading cause of maternal mortality in developed countries, and its prediction in asymptomatic normotensive pregnancies is a challenge for cardiologists and obstetricians. The disease is complex, associated with multiple genetic disorders, which result in abnormal placentation with inadequate differentiation of the maternal trophoblast, preventing the remodeling of the uterine arteries, and generating an imbalance of inflammatory, angiogenic, placental and systemic mechanisms.

Initially, the clinical characteristics of the patients were the only tool used to predict the outcome; later, uterine artery Doppler ultrasound measurement was used. In recent years, assessment of placental growth factor (PlGF) r serum levels or soluble fms-like tyrosine kinase 1 (sFlt1) and estimation of the sFlt-1/PlGF ratio in the second trimester of pregnancy was added, with high negative predictive value but with a 20% of false positive results. (1)

The hemodynamic evaluation of the pregnant woman to predict HDP was difficult to incorporate into routine medical practice, because it required the use of Doppler echocardiography and mathematical calculations that were not automatically computed by the equipment, or impedance cardiography. Such methods

increased costs, were frequently inaccessible, and required well-trained physicians. The use of USCOM® and NICOM ® devices, available since 2015, provide information about maternal cardiac output and systemic vascular resistance (SVR) in each heartbeat by simply placing a transducer on the suprasternal notch and chest wall in a non-invasive and automated fashion and without requiring operator training. These methods, which have already been used in daily practice to measure maternal hemodynamic parameters, particularly in developed countries, have been validated and have demonstrated that the persistent increase in SVR measured in the second trimester of pregnancy is an independent predictor with high sensitivity and specificity. (2-3)

In the "Preeclampsia is Preceded by Abnormalities in Cardiovascular Function" article by Paez et al., (4) hemodynamic parameters were measured in 260 primiparous women during the second trimester of pregnancy and 1 year later, with estimation of cardiac index, SVR, and pulse wave velocity (PWV) by traditional methods as color Doppler echocardiography and impedance cardiography. The population was divided into three groups: preeclampsia, gestational hypertension or normotension. As most patients developed late-onset HDP, after 34 weeks of pregnancy, it was not possible to compare the hemodynamic patterns of early-onset HDP and late-onset HDP. However, at 22 weeks of pregnancy, and to a lesser extent at one year after delivery, patients with HDP had higher blood pressure, SVR and PWV, and lower cardiac index and heart rate, compared with normotensive patients. These findings were more evident in the preeclampsia group than in the gestational hypertension group. These results are in line with most publications on this subject, highlighting the predictive value of maternal hemodynamic changes in the second trimester, which persist for a year, as long-term markers of endothelial dysfunction. (5) Although the hemodynamic abnormalities that persist over time are evident in early-onset preeclampsia and in the subsequent HDP in different pregnancies, they are not common in late-onset preeclampsia in primiparous women as it happened in this population.

Recently, McLaughlin et al. (6) reported that the determination of biomarkers and SVR would represent the option with the best predictive value even one month before the development of signs and symptoms of HDP.

This also makes us reconsider whether we could initiate treatment before the onset of symptoms, and whether the treatments currently used, mainly first choice drugs, as for example, beta-blockers as labetalol, should be guided by hemodynamic parameters, as some authors suggest, or not, according to ACOG, NICE, and ESC guidelines. But the evidence is still insufficient, and the number of antihypertensive drugs allowed in pregnancy is limited. The next challenge will be to work on these issues.

Ana M. Escobar,
Marcela C. Cabo Fustaret
Department of Cardiology, Cardio-Obstetrics Section,
Hospital Alemán, Buenos Aires
E-mail: escobaranamaria@gmail.com

Conflicts of interest
None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

REFERENCES

1. Thadhani R, Mutter WP, Wolf M, Levine RJ, Taylor RN, Sukhatme VP, et al. First trimester placental growth factor and soluble fms-like tyrosine kinase 1 and risk for preeclampsia. J Clin Endocrinol Metab 2004;89:770-5.
2. Vinayagam D, Patey O, Thilaganathan B, Khalil A. Cardiac output assessment in pregnancy: comparison of two automated monitors with echocardiography. Ultrasound Obstet Gynecol 2017;49:32-38. doi: 10.1002/uog.15915.
3. Khalil A. Maternal systemic circulation in normotensive pregnancies and those complicated by preeclampsia. Pregnancy Hypertens 2015;5:11. https://doi.org/ 10.1016/j.preghy.2014.10.026
4. Paez OB, Puleio PA, Visser M, Mazzeo S, Antelo L, Alderete JR, ET AL. Preeclampsia is Preceded by Abnormalities in Cardiovascular Function. Rev Argent Cardiol 2020;88:52-56. http://dx.doi.org/10.7775/rac.v88.i1.17192
5. Thilaganathan B, Kalafat E. Cardiovascular System in Preeclampsia and Beyond. Hypertension 2019;73:522-31. https://doi.org/10.1161/HYPERTENSIONAHA.118.11191
6. McLaughlin K, Zhang J, Lye SJ, Parker JD, Kingdom JC. Phenotypes of pregnant women who subsequently develop hypertension in pregnancy. J Am Heart Assoc 2018;7: e009595. https://doi.org/10.1161/JAHA.118.009595

Rev Argent Cardiol 2019;87:171-172. http://dx.doi.org/10.7775/rac.v88.i2.17586

Doctors as a machine, not as balance

The world has lost its balance and harmony. In the 21st century, everything is justified by globalization, the age of technology and related advances, but the truth is that the world has lost the human being as a person, in his or her integrity and essence; the human being who maintains the balance between body, mind and soul, which allows the connection with the entire universe. In the article "Mistreatment in Medical Training: Situation in Cardiology Residences", Galli et al. clearly explain the result of believing in a violent method to generate suitable professionals.

Unfortunately, violence generates more violence, and discipline does not mean mistreatment. Medical residents are perceived as students or trainees, and not as professionals; but the saddest thing is that they are not considered human beings, they cannot make mistakes. They are machines that solve problems, that work endless hours and that do not take care of the patient as someone who must reestablish a lost harmony. Clearly, if they are not treated on a balanced basis, how can we expect doctors to be able to see their patients as a whole?

They are trained to fix bodies, not heal souls. As the

article correctly mentions, reproducing Albert Bandura's words, "[…] most human behavior is learned observationally through modeling. Observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action". Medicine has lost its anthropological act; the rules of behavior learned are those of a job that must be done, and if not, doctors will be punished, humiliated, intimidated. Verticalism seems the only way to succeed to reach the top, as in the corporate ladder. Doctors are not trained to listen to patients, to understand them, to accompany them, to perceive that their diseases are the manifestation of a framework of worries or situations on which they do not stop thinking. A paradox since it is the same situation that physicians experience in their residency programs. The article mentions different studies in the world that have demonstrated the clear relationship between physical and psychological abuse received by medical residents and the development of burnout syndrome, included in the new International Classification of Diseases (ICD-11), as well as depression and anxiety. In the psychological concept the manifestation of diseases begins with a simple action when the person cannot talk or is not listened or contained. The mind turns it into a symptom and the soul suffers. We live in a world that is governed by the mistreatment of nature, animals and human beings, in a framework where respect, ethics and morality have been lost. It is time to change that reality, from wherever one can. It would be important to develop specific training programs to restore the balance and lost values. Doctors are not machines, we are not here to fix bodies, but to heal souls.

Dr. María Elena Bastarrica
Cardiologist
Ministry of Health, Argentina

Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

REFERENCES

Galli A, Gimeno G, Lobianco MD, Swieszkowski S, Grancelli H, Kazelian L, et al. Maltrato en la formación médica: situación en las residencias de cardiología. Rev Argent Cardiol 2010;88:48-54. http://dx.doi.org/10.7775/rac.es.v88.i1.15783

Rev Argent Cardiol 2019;87:172-173. http://dx.doi.org/10.7775/rac.v88.i2.17583