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Editorial

Idiosyncrasy in Science: an idea forgotten or not understood?

Idiossincrasia na Ciência: ideia esquecida ou não entendida?

Jefferson Petto[1,2,3,4], Thiago Bouças Duarte[3,5,6], Taissa Argolo Jesus[3].

1. ACTUS-CORDIOS Reabilitação Cardiovascular, Respiratória e Metabólica, Salvador, BA, Brazil.
2. Centro Universitário Social da Bahia, Salvador, BA, Brazil.
3. Faculdade do Centro Oeste Paulista, Bauru, SP, Brazil.
4. Escola Bahiana de Medicina e Saúde Pública, Salvador, BA, Brazil.
5. Hospital Português da Bahia, Salvador, BA, Brazil.
6. Universidade Salvador – Unifacs, Salvador, BA, Brazil.

The idea of idiosyncrasy (*idiosugkrasía*) emerged in Greek civilization and referred to the individual's peculiar behavioral condition [1]. In current medicine, the term refers to "*the particular predisposition of the organism that causes an individual to react personally to the influence of external agents, such as food and drugs*" [1].

Although most people intuitively think that for each action imposed the reaction can be different, in the plurality of times, the prevailing thought is that of generalization. This does not seem to be different in science and clinical practice. The understanding that external and internal factors will be determining the response to a treatment should be the basis, both in research and in health practice, however it is not. Certainly, there are several reasons for this behavior and one of them is the misinterpretation of the scientific text.

We know that the most widely read section of a scientific article is the summary, and the most widely read summary is its conclusion. The conclusion points out "*the authors' position or solution based on the arguments presented; sometimes it suggests unfolding* "[2]. Therefore, it answers in a conceptual and generic way the question that generated the objective of the work. Not intentionally, but the idiosyncrasy in this text is omitted, because it is inherent in scientific writing.

For example, we recently published an article entitled "*Plasma Renin in Women Using and Not Using Combined Oral Contraceptive*", in which we tested the hypothesis that women using combined oral contraceptive (COC) have plasma renin values different from their counterparts that do not use this drug [3]. In parallel, we also evaluated Reactive Protein C (RPC). It was an observational cross-sectional study. Figure 1 shows the results of this study in relation to plasma renin. As you can see, we see that the group using COC has plasma renin values statistically higher than the group without COC. What is our con-

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Correspondence: Jefferson Petto. Av. Anita Garibaldi, 1815 , CME, Sala 13. Ondina, Salvador - BA, 40170-130.
E-mail: gfpec@outlook.com

clusion? I report: "*Women using COC have higher serum levels of plasma renin and C-Reactive Protein than women who do not use this drug. This points to the possibility that this population has a higher risk of developing systemic arterial hypertension in the long term, which associated with subclinical inflammation can increase the risk of cardiovascular diseases*" [3].

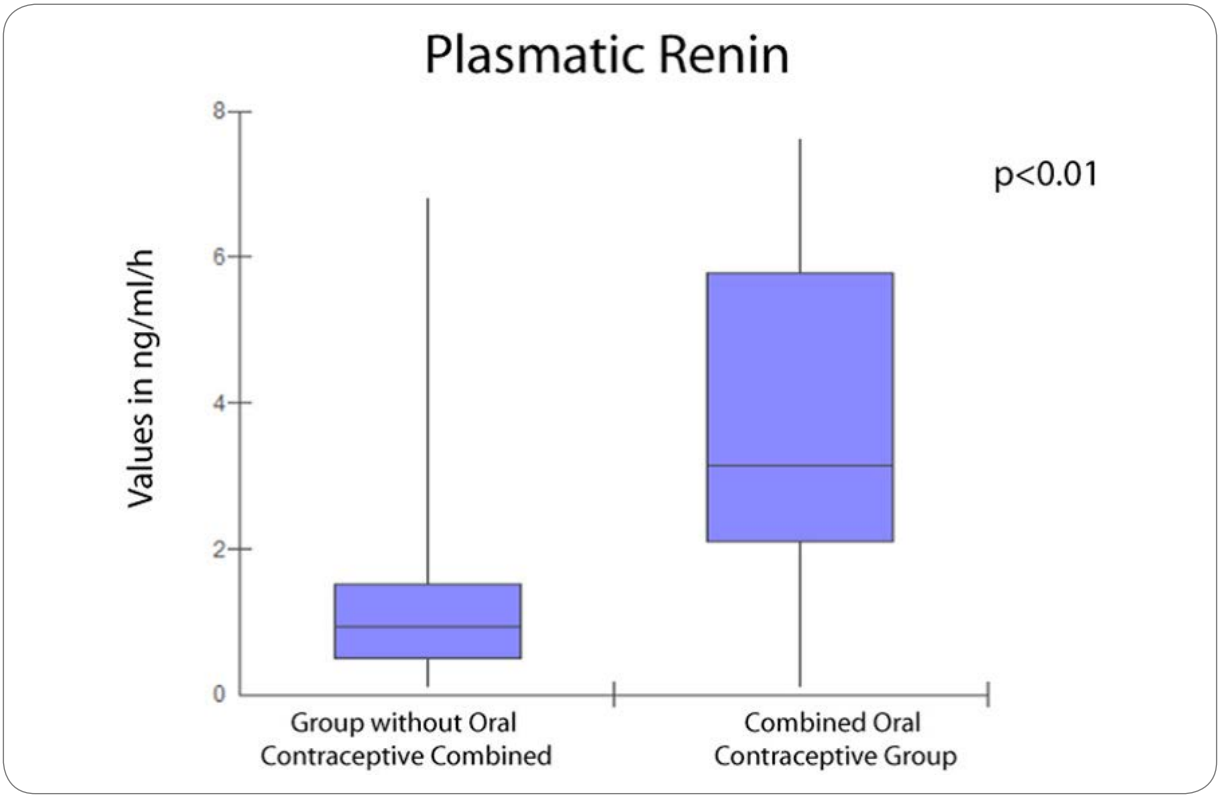

Figure 1. Median and quartile intervals of the groups with and without combined oral contraceptives.

However, it is also possible to observe in figure 1, that not all women using COC had higher renin values than the group without COC and that the opposite is also likely, especially in a non-parametric distribution like this. That is, although the conclusion is based on a well-performed statistical analysis, it is necessary to understand that the fact that we found a statistical difference between the groups does not mean that all the volunteers in the sample behaved in the same way.

If a study shows that high-intensity exercise was beneficial for patients with Ischemic Heart Failure with Intermediate Ejection Fraction, it does not mean that everyone with this clinical condition will benefit. Physical exercise is a therapy that, like any other, can have a neutral, positive or negative effect. That is why understanding health idiosyncrasy is so important. Knowing that our patient can respond differently to a treatment, even if the evidence indicates that it is safe and effective, keeps our reasoning open to changes that are necessary during the follow-up.

Therefore, it is imperative for quality praxis that the professional uses the knowledge of science with good wisdom, interpreting it properly and using the knowledge available in light of the clinical, social and biological condition of each patient or client. Scientific evidence provides us with a basis for a better-founded therapeutic direction, but it does not tell us exactly how we should conduct our intervention in an airtight manner. Understanding and applying the idea of idiosyncrasy frees us from a general protocol, from the evaluation, the preparation of the prognosis, the initial prescription to the evolution of the treatment. No treatment is 100% foolproof or 100% effective.

Corroborating this thought, there is in biostatistics what we call NNT (number needed to treat), number of individuals treated so that the benefit of a given intervention occurs in an individual. For example, for individuals after myocardial infarction, it is necessary to treat 842 patients with beta-blockers in order to avoid death (NNT 842). Considering Cardiac Rehabilitation, the NNT for individuals after myocardial infarction is 66 [4]. So will all post-myocardial infarction patients who enter a Cardiac Rehabilitation program have the benefit of increased survival? The answer is no. Because despite the studies pointing out that Cardiac Rehabilitation increases survival, as we can see, we need to treat at least 66 patients to obtain this response with 1 patient.

In short, correctly interpreting the relationship between idiosyncrasy and the completion of scientific work, the basis of evidence-based medicine, will allow us to achieve a better quality of treatment and consequently impact the health of the community more effectively.

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