In summary, the BF is a useful methodological tool with practical implications for decision-making based on the confirmation of conclusive results, now even more important in the context of COVID-19.

FUNDING

No funding has been received.

CONFLICTS OF INTEREST

No conflicts of interests.

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Available online 12 April 2021

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https://doi.org/10.1016/j.rec.2021.01.020
1885-5857/

The use of Bayes factor in clinical cardiology research. Response

El uso del factor Bayes en la investigación clínica de cardiología. Respuesta

To the Editor,

We greatly appreciate Cristian Antony Ramos-Vera's interest in our article; in his letter he highlights the virtues of using Bayes factor (BF) as an alternative to the traditional dichotomous interpretation of hypothesis testing, and his analysis provides more robust support for our findings.[1]

Frequentist statistics almost entirely dominate medical research. The average reader has interiorized the concepts of hypothesis testing, *P* value, and statistical significance. The limitations of frequentist statistics and the problems with their interpretation have been widely discussed[2] and, in addition, repeated appeals have been made to include Bayesian statistics in biomedical research.[3] While it is true that Bayesian statistics allow a more natural and intuitive interpretation, the reality is that their use is not widespread and most readers do not understand them.

Hoekstra et al.[4] performed a reanalysis of 36 articles with negative results and calculated the BF. The smallest BF was 2.42 (observed data are 2.42 times more probable under the null hypothesis) and the largest, 560.9. A key point is that there was a poor correlation between the *P* value and the BF. A high *P* value may have been present in studies with little evidence in favor of the null hypothesis (low BF) or in studies with strong evidence (high BF). This allows us to assert that the BF intuitively communicates the probative strength of the hypothesis; therefore, we, like Dr Ramos-Vera, recommend that this should routinely be included in scientific articles.

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https://doi.org/10.1016/j.rec.2021.01.020

FUNDING

No funding was received for this article.

AUTHORS' CONTRIBUTIONS

J.M. Monteagudo conceived and wrote the article. J. Solano-López critically reviewed the manuscript. J.L. Zamorano critically reviewed the manuscript. Á. Sanchez-Recalde conceived the idea for this article and critically reviewed the manuscript. All authors have approved the final version of the manuscript.

CONFLICTS OF INTEREST

Á. Sánchez-Recalde is associate editor of *Revista Española de Cardiología*; the journal's established editorial procedure was followed to ensure the impartial handling of this manuscript.

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Available online 23 April 2021

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https://doi.org/10.1016/j.rec.2021.03.011
1885-5857/

Helical flow as a new determinant of coronary plaque vulnerability: a glimpse into the future

El flujo helicoidal como determinante de placa vulnerable: una mirada al futuro

To the Editor,

Over the last 2 decades, a growing body of evidence has emerged from both in vitro and in vivo studies regarding the relationship between the hemodynamic properties of blood flow and atherosclerotic plaque formation on coronary arteries. It is well known that atherosclerotic lesions typically develop at areas of low wall shear stress (WSS), which are associated with the development of unstable, rupture-prone atherosclerotic plaques.[1] In this context, low-WSS segments develop larger plaques and promote necrotic core progression as well as constrictive remodeling, while high-WSS segments favor larger necrotic core formation, calcium progression and excessive expansive changes, leading to a more vulnerable plaque phenotype.[2]

An intriguing novel determinant of WSS is represented by helical flow (HF). Indeed, a counterrotating-bi-helical-flow pattern, which is physiologically present in coronary arteries, has been described to be inversely associated with HF intensity. HF, per se, is characterized by high velocity and high WSS, which can confer atheroprotective effects facilitating the diffusion of oxygen, reducing the uptake of low-density lipoprotein, and the adhesion of inflammatory cells on the endothelium.[2] In this regard, Morbiducci et al.[3] observed that this flow pattern was also present on coronary artery bypass grafts, showing that its value leads to a lower WSS temporal gradient at the proximal graft. In more recent years, De Nisco et al.[4] reported that HF intensity was significantly correlated with WSS magnitude while coronary artery regions exposed to high baseline levels of HF intensity exhibited a significantly lower wall thickness growth than segments with either mid or low HF intensity.

The prompt and noninvasive identification of unstable coronary artery plaques still represents an important unmet medical need. HF could be a novel surrogate determinant of plaque vulnerability. In the near future, it will be possible to use software similar to that of computed tomography angiography-derived fractional flow reserve,[5] which is currently entering clinical practice as an alternative to invasive fractional flow reserve, and online computational fluid dynamic analysis to identify coronary segments and plaques at low HF, and thus exposed to the risk of rupture.

FUNDING

None.

AUTHORS' CONTRIBUTIONS

M. Zuin: conceptualization, drafting the article; G. Rigatelli: drafting the article, references; G. Zuliani: reviewing and editing; L. Roncon: reviewing, editing, and supervision.

CONFLICTS OF INTEREST

None of the authors have any conflicts of interest to declare.

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Available online 26 March 2021

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https://doi.org/10.1016/j.rec.2021.02.007
1885-5857/