

The Importance of Observational Studies

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Short Editorial referring to the article: *Exploring Risk Factors, Comorbidities, and Multiple Drug Therapy in Coronary Artery Disease Patients*

Discussing coronary artery disease without beginning with the traditional phrase “cardiovascular diseases are the leading cause of death worldwide” becomes challenging – especially because that statement, unfortunately, is no longer sufficient. There is no way to avoid it except by expanding upon it: in addition to leading global mortality statistics, cardiovascular diseases represented the primary cause of disability-adjusted life years (DALYs) in 2023, accounting for 437 million (95% UI: 401–465 million) DALYs worldwide – a 1.4-fold increase compared with 1990.¹

Naturally, ischemic heart diseases are included in this group and ranked first, with 193 million DALYs in 2023 and an age-standardized mortality rate of 99.8 (89.9–108.4) per 100,000 inhabitants, according to data from the Global Burden of Disease (GBD).¹

The assessment of DALYs is essential for prioritizing large-scale governmental actions, as their calculation involves the sum of years of life lost (YLL) due to premature death relative to life expectancy and years lived with disability (YLD). Because the concept expresses the result as 1 DALY = 1 year of healthy life lost, the figures presented above (1) become more understandable – and even more alarming. Therefore, in addition to reflecting a macro-level health metric, a reduction in DALYs may indirectly indicate greater access to effective treatment and a decrease in premature mortality.^{1,2}

Advances in knowledge and research allow us to take a deeper dive into indicators and numbers. Based on GBD data¹ and considering the dimension of DALYs, it is essential to observe, in each locality, what actually occurs at the point of medical care. For this reason, evaluating real-world data through observational studies, for example, becomes important, as these studies are used to generate hypotheses and guide improvements in the management of patients with ischemic heart disease.³

These studies make it possible to assess the profile of patients in each location or region and, in many cases, to understand whether there is a gap between

guideline-recommended care and the treatment delivered.^{3,4} However, perhaps the most important aspect is the recognition of real local practices, enabling comparison with evidence-based recommended treatment and the adoption of region-specific measures to reduce cardiovascular events and improve the quality of life of the end user.

In this context, in the current issue of the *International Journal of Cardiovascular Sciences*, Inamdar et al.,⁵ in a prospective observational study conducted at a tertiary hospital in India, evaluated 300 patients hospitalized with coronary artery disease. The investigators assessed patient profiles, clinical presentation, comorbidities, and the treatments provided. Even with some limitations and biases, several points highlighted by the authors deserve discussion.

It is interesting to note that presentations of angina – both stable and unstable – were more common in women, whereas the different types of myocardial infarction (with and without ST-segment elevation) were more common in men.⁵ This finding may reflect the higher prevalence of microvascular angina and its variants in women, while epicardial coronary disease tends to be more prevalent in men.⁶

Regarding risk factors, hypertension, diabetes, and dyslipidemia were the most prevalent, observed in 71%, 50%, and 48.3% of cases, respectively.⁵ This finding is not surprising; however, the analysis must be interpreted with caution, as it is based on outcomes and therefore reflects prevalence within a higher-risk population. On the other hand, only 3.6% of patients had none of the listed risk factors or comorbidities.⁵ At this point, it is important to highlight the association between ischemic heart disease and non-traditional risk factors, such as the sociodemographic index,^{7,8} which, although not quantified by the authors, may exert systemic influence on the observed results.

Additionally, this study provides an important piece of information – common in populations with ischemic heart disease but deserving greater emphasis – related to polypharmacy. The authors observed that 91% of patients were, at some point, taking five or more medications routinely.⁵ Naturally, the appropriate management of multimorbidity, also noted by the authors, is linked to polypharmacy, especially when striving for excellence in care according to international targets. However, it is urgent to emphasize the adoption of non-pharmacological measures as part of a comprehensive approach, and especially to recognize that the long-term cost of maintaining multiple medications is not negligible. This factor may affect treatment adherence in the medium to long term,^{9–11} and programs for free or subsidized medication distribution

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should be considered in population-level strategies for managing the disease.

Finally, despite being single-center and including patients with stable angina, the study conducted by Inamdar et al.⁵ provides important insights into the profile and management of patients hospitalized with coronary artery disease in a tertiary center in India. As an

observational study, it fulfills its purpose. However, beyond generating statistics and enabling a better understanding of the disease, it is essential to translate these numbers into improvements in patient care and, on a broader scale, in the health of the local population, with the goal of reducing both morbidity and mortality associated with ischemic heart disease.

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