Cardiovascular Inflammation: Giving Voice to the Silent Residual Risk

Despite advances in cardiovascular disease (CVD) treatment, many patients still experience events such as heart attacks and strokes even after controlling classic risk factors like cholesterol and blood sugar. This reveals an important gap in the current approach: residual risk —especially inflammatory risk, which remains invisible and untreated. Highlighting this risk is essential to changing the course of the disease and saving lives.

About the Disease

Cardiovascular diseases (CVD) are the leading cause of death worldwide—and Latin America is no exception. Globally, more than 17.9 million people died from CVD in 2016, representing 31% of all deaths that year [1]. The projection is that this number will exceed 22.2 million by 2030 [2].

In Latin America, although the data is less consolidated than in other regions, it is estimated that the prevalence of CVDs is between 9% and 11% of the adult population, which represents approximately 50 to 60 million people affected in the region [2]. The burden is even greater among people with type 2 diabetes, obesity, or a history of heart attacks.

Additionally, ischemic heart disease (such as acute myocardial infarction) and stroke are responsible for more than 50% of cardiovascular deaths in the region. In countries like Brazil, Mexico, and Argentina, these conditions have been among the top three causes of death for over a decade [1].

Despite the growing use of therapies like statins and antidiabetics, many patients continue to experience recurring cardiovascular events. This highlights that the current treatment, mainly focused on cholesterol and blood sugar, is not sufficient to eliminate risk—and that's where the concept of residual risk comes in [3].

What is Residual Inflammatory Risk?

It is chronic, silent and persistent inflammation that remains active even after standard treatment. It can be measured by a biomarker called hsCRP (high-sensitivity C-reactive protein). Elevated hsCRP levels (≥2 mg/L) indicate a higher risk of cardiovascular events, regardless of cholesterol levels [4][5][6].

Why is this a Problem?

Despite robust evidence, most healthcare professionals do not routinely request hsCRP. This means millions of at-risk patients are not identified—and therefore not adequately evaluated and profiled for treat adjustment [7][8].

"We cannot treat what we do not measure."

Relevance in Latin America

Latin America faces a high burden of CVD, with growing prevalence and significant mortality. However, there are no widely available data on the prevalence of residual inflammatory risk in the region, making public policies and screening strategies difficult [9][10].

Visual Analogies

“It's like driving with the handbrake on”: even with proper treatment, inflammatory risk prevents full progress.

“It's like an iceberg”: what we see (cholesterol, blood sugar) is just the tip—the inflammation is submerged, silent, and dangerous.

“In a stadium with 50,000 people with CVD, more than 20,000 may have residual inflammatory risk and not know it.”

“Just like an invisible fire that continues to burn even after the alarm is turned off, cardiovascular inflammation is a risk that persists even when everything seems to be under control.”

Challenges

- Widespread underdiagnosis: Most patients with inflammatory risk are not identified as hsCRP is not routinely requested.
- Low medical familiarity: Many professionals are unaware of the importance of hsCRP as a cardiovascular risk marker.
- Absence of clear local guidelines: Although some international guidelines recognize hsCRP as a risk factor, it is not yet widely incorporated into clinical practices in Latin America.
- Lack of population awareness: Patients do not know they may be at risk even with “normal” exams.

Challenge Proposal for the Hackathon

How can we increase the detection of patients with residual inflammatory risk?

From the perspective of healthcare professionals: decision support tools, medical education, clinical alerts.

From the perspective of patients: awareness campaigns, risk self-assessment, digital engagement.

From the perspective of the health system: inclusion of hsCRP in protocols, reimbursement, population data collection.

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