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EDITORIAL COMMENT

The critical challenge of aortic valve replacement waiting times is just the tip of the iceberg: A call for systematic healthcare reform

O desafio da gestão das listas de espera para substituição valvular aórtica é a ponta do *iceberg*: um apelo à reforma sistemática dos cuidados de saúde

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We read with interest the article by Martins et al.,[1] which presents sobering evidence of a healthcare crisis that extends far beyond the borders of Portugal.[2] Their retrospective analysis of 241 patients with severe aortic stenosis (AS) reveals waiting times for aortic valve replacement (AVR) that are not merely concerning – they are potentially lethal. With median waiting times of 226 days for surgical aortic valve replacement (SAVR) and 426 days for transcatheter aortic valve implantation (TAVI), these findings represent a stark departure from international recommendations and highlight a systemic failure that demands immediate attention. The main limitation primarily stems from its single-center, retrospective design and the unique referral system that artificially inflates TAVI decision times. There are several points that ought to be highlighted:

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The magnitude of the problem

Severe AS is fundamentally a time-sensitive condition. Once symptoms develop, the natural history is unforgiving, with average survival of 2–3 years without intervention.[3] The authors' findings that 13% of patients required hospitalization and 6% died while waiting for intervention, underscore the human cost of prolonged waiting times. Previous studies have shown mortality while waiting for AVR ranging from 3.7% to 11.6% at one and six months, respectively, making the 6% mortality rate reported by Martins et al. consistent with, although still unacceptably high by international standards.[4] The disparity between recommended and actual waiting times is particularly striking. The Canadian Wait Time Alliance recommends a maximum waiting times of 42 days for elective SAVR and 84 days for elective TAVI,[5] yet the Portuguese cohort experienced waiting times that were 5–6 times longer.[6] This represents not merely a quality-of-care issue but a fundamental breach of the therapeutic covenant between healthcare systems and patients with life-threatening conditions.

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Understanding the root causes

The authors correctly identify healthcare system capacity constraints as the primary driver of prolonged waiting times. Portugal's healthcare infrastructure challenges are not unique, since many European countries face similar pressures from aging populations and increasing prevalence of valvular disease. However, the severity of the delays suggests deeper structural problems that require multifaceted solutions. The Portuguese hospital referencing network of Cardiology, Pediatric Cardiology and Cardiac Surgery was published in 2023.[6] The analysis of the causes of the waiting list growth was seen as multifactorial, complex and variable over time. The increasing number of patients on the waiting list could be perceived as a consequence of the increase in referral for surgery, either due to the aging of the population or the greater accessibility to consultations and complementary diagnoses, greater awareness of treatment possibilities and/or inability to maintain or increase production proportionally. Common causes, frequently mentioned, for production constraints, according to information obtained from department directors, was the shortage of anesthesiology resources, intensive care unit (ICU) nursing resources, lack of ICU beds and wards, lack of response from continuing care (particularly in the case of complications such as stroke, deficiencies without home support or social problems).

Moreover, the finding that TAVI waiting times exceeded those for SAVR deserves particular attention. While TAVI was initially reserved for high-risk patients, recent evidence supports its use across broader populations.[7] Therefore, strategies to shorten these times should be pursued, either by facilitating the referral from non-TAVI centers, increasing the capacity of TAVI centers or opening new centers.

The clinical consequences: beyond mortality statistics

While mortality represents the most devastating outcome, the broader clinical implications of prolonged waiting times extend throughout the patient journey. The study demonstrates that extended delays are associated with clinical deterioration, with around 70% of hospitalized patients ultimately requiring urgent rather than elective intervention.[1] This progression from elective to urgent care represents a failure of timely intervention that not only increases patient risk but also strains emergency healthcare resources. This is a very serious issue that puts at risk all patients listed for cardiac surgery, since a great proportion of patients are operated in an urgency basis, filling operating times and postponing even more, those elective patients that are on the waiting list. Hence, these patients can potentially aggravate their condition while waiting, and when scheduled for surgery can present a more detrimental clinical condition associated with a higher surgical risk.[2]

The psychological toll on patients and families represents an additional burden that cannot be overlooked. The uncertainty and progressive symptoms experienced during extended waiting periods profoundly impacts quality of life and may contribute to anxiety, depression, and social isolation – factors that can independently affect surgical outcomes.

Systemic solutions: learning from international models

The contrast between Portuguese waiting times and those achieved in other healthcare systems offers valuable insights. Canadian data suggests that while waiting times of almost 3 months remain associated with important morbidity and mortality, systems can achieve more timely care when capacity matches demand. This suggests that solutions exist but require coordinated implementation.[8] Several strategic approaches merit consideration: capacity expansion – the fundamental solution requires increasing both SAVR and TAVI capacity. This involves providing the existing surgical and structural laboratories centers with greater logistic capacity, from operating/intervention times and human resources not only additional cardiac surgery centers, but also the development of hybrid cardiac programs that can efficiently triage patients between surgical, transcatheter and hybrid approaches, based on individual risk profiles and anatomical considerations. Pathway optimization: the finding that TAVI patients experienced nearly four times longer decision-making delays suggests significant opportunities for care pathway refinement. Direct referral protocols from cardiology to structural heart disease teams, bypass mechanisms for appropriate candidates, and standardized decision-making algorithms could substantially reduce time to intervention. This is also applicable to SAVR patients, creating dynamic communication channels between referral physicians and surgeons can enhance the timing of the surgery. Risk stratification and prioritization: current guidelines provide limited guidance on prioritizing patients within waiting lists. Development of validated risk prediction models that incorporate potential clinical deterioration could enable more sophisticated queue management and potentially reduce waiting list mortality.[9] More recently, a Portuguese Working Group was appointed jointly by the Portuguese Society of Cardiothoracic and Vascular Surgery and the Portuguese Society of cardiology to issue endorsements on waiting times for cardiac surgery.[10] The purpose was to develop practical recommendations for clinically acceptable waiting times for the three critical phases of the care of adults with heart disease who require surgery or other cardiological intervention: cardiology appointments; the diagnostic process; and invasive treatment.

The economic imperative

While not directly addressed in this study, the economic implications of prolonged waiting times are substantial. Patients who deteriorate while waiting require more complex interventions, longer hospital stays, and more intensive post-operative care. The progression from elective to urgent care represents a shift from cost-effective planned interventions to expensive emergency procedures with higher complication rates. Recent evidence suggests that increased wait times are independently associated with worse long-term outcomes even after successful intervention, implying

that delays may compromise the durability of treatment benefits and increase long-term healthcare costs.

Technology and innovation as solutions

The evolving landscape of aortic valve intervention offers reasons for optimism. Advances in TAVI technology, including improved delivery systems and valve designs, have reduced procedural complexity and expanded the treatable population. Simultaneously, the development of minimally invasive surgical approaches has reduced recovery times and potentially increased surgical capacity. Moreover, surgical results are improved greatly; we recently audited our results at the Coimbra Cardiothoracic Surgery department and the hospital mortality in 2024 for isolated aortic valve surgery was around 0.5% and in the first semester of 2025 we did not lose a patient. Likewise, the pacemaker rate was around 1.5% without any case of moderate or severe paravalvular leak (unpublished data). Telemedicine and remote monitoring technologies could enable more efficient pre-operative assessment and post-operative follow-up, potentially increasing effective capacity without proportional increases in physical infrastructure. These innovations, while not panaceas, represent important tools in addressing capacity constraints.

A call for action

These findings should serve as a catalyst for immediate and sustained action. Healthcare systems worldwide must recognize that waiting times for life-saving interventions reflect fundamental questions about societal values and healthcare priorities. The treatment of severe AS represents a success story of modern medicine – we possess highly effective interventions that can restore quality of life and extend survival. The challenge lies not in our therapeutic capabilities but in our collective commitment to ensuring timely access to these life-saving treatments.

Notwithstanding the results of SAVR, the specialty of Cardiac Surgery is in jeopardy, it is becoming unattractive for younger doctors, probably due to the burden that it carries, the responsibility of having someone's life in our hands and the stressed imposed by this context. The economic issue has also aggravated the situation in comparison with other lesser demanding specialties. Foreseeing for the near future more demanding surgeries (complicated prosthetic and TAVI endocarditis, complex myocardial revascularization, acute aortic syndromes, and others), operating older patients and patients with more comorbidities, a revision of the valorization of the cardiac surgery procedures in term of reimbursements/GDIH is urgent. Policymakers and healthcare stakeholders should acknowledge this.

In conclusion, the Portuguese experience documented in this study represents a microcosm of broader challenges facing healthcare systems globally. While the specific waiting times reported may reflect particular local constraints, the underlying issues – aging populations, increasing disease prevalence, and limited healthcare capacity are universal concerns. The path forward requires sustained commitment from healthcare administrators, policy makers, and clinical leaders to develop and implement comprehensive solutions. This includes not only capacity expansion, but also care pathway optimization, technological innovation adoption, and the development of more sophisticated approaches to waiting list management.

Conflicts of interest

No conflicts of interest.

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