Infective Endocarditis Epidemiology Over Time: An Analysis of a National Registry Between 1996 and 2023

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One of the approaches of studying diseases is how they evolve over time in different scenarios. Time may refer to years, decades, even centuries; scenarios may refer to different geographic peculiarities, epidemiological conditions, clinical and surgical therapeutic medical facilities available, access to proper health care, access to the diagnosis, and access to the treatment.

Infective endocarditis has been subject to this approach over time after the description of the disease in seventheenth century.[1] Among the historical outstanding contributions were the three famous Gulstonian Lectures delivered by William Osler.[2] As a rare disease, incidence of infective endocarditis was estimated to be between 3 and 10 episodes per 100,000 person-years in different surveys.[3] Decades ago, institutional reports of large series of patients over time were traditional in the literature.[4-6] Some of these series were published before the advent of large epidemiological studies that were feasible due to new technologies related to data science and data analyses. More recent reports have studied the changing nature of the disease over time: in France,[7] in an American county,[8] in England,[9] in Italy,[10] in Europe,[3] in an international collaboration,[11] and in one Brazilian institution over a four-decade period.[12]

In this issue of the journal,[13] the authors report on an epidemiological analysis of mortality of patients with the diagnosis of infective endocarditis over a 27-year period in Brazil (1996-2023), by means of an exploratory retrospective and descriptive approach with secondary data retrieved from the Mortality Information System (SIM) and made available in the Unified Health System's website (DATASUS). The data available included that up to 2023. Cases were retrieved by listing selected ICD-10 codes (I33, I38). Potentially related codes, such as I33.9 or B37.6, were not included in the analyses. Thus, sub-representation of diagnosis due to the retrieval system may have occurred.

The highest number of deaths occurred in 2023, with 2,279 cases (5.68%), while the lowest prevalence occurred in 1996, with 689 cases (1.72%). There was a high discrepancy in frequencies according to the region of the country, which proved to be highest in Southeast. The findings have demonstrated regional disparities and sex differences. Such disparities may be related to different population densities, either in rural areas or urban areas; an epidemiological environment; access to healthcare facilities for diagnoses and treatment; as well as access to resources for diagnosis and therapy in the different regions of the country. In conclusion, the study adds to epidemiologic research in the field and may be of help for additional studies and interventions.

Keywords

Endocarditis; Epidemiology; Registros de Doenças.

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References

1. Kerr A. Subacute Bacterial Endocarditis. Charles C Thomas. 1955.
2. Osler W. The Gulstonian Lectures, on Malignant Endocarditis. Br Med J. 1885;1(1262):467-70. doi: 10.1136/bmj.1.1262.467.
3. Tornos P, Gonzalez-Alujas T, Thuny F, Habib G. Infective Endocarditis: The European Viewpoint. Curr Probl Cardiol. 2011;36(5):175-222. doi: 10.1016/j.cpcardiol.2011.03.004.
4. Rabinovich S, Evans J, Smith IM, January LE. A Long-Term View of Bacterial Endocarditis. 337 Cases 1924 TO 1963. Ann Intern Med. 1965;63:185-98. doi: 10.7326/0003-4819-63-2-185.
5. Pelletier LL Jr, Petersdorf RG. Infective Endocarditis: A Review of 125 Cases from the University of Washington Hospitals, 1963-72. Medicine. 1977;56(4):287-313.
6. Garvey GJ, Neu HC. Infective Endocarditis--An Evolving Disease. A Review of Endocarditis at the Columbia-Presbyterian Medical Center, 1968-1973. Medicine. 1978;57(2):105-27.
7. Duval X, Delahaye F, Alla F, Tattevin P, Obadia JF, Le Moing V, et al. Temporal Trends in Infective Endocarditis in the Context of Prophylaxis Guideline Modifications: Three Successive Population-Based Surveys. J Am Coll Cardiol. 2012;59(22):1968-76. doi: 10.1016/j.jacc.2012.02.029.
8. Sa DDC, Tleyjeh IM, Anavekar NS, Schultz JC, Thomas JM, Lahr BD, et al. Epidemiological Trends of Infective Endocarditis: A Population-Based Study in Olmsted County, Minnesota. Mayo Clin Proc. 2010;85(5):422-6. doi: 10.4065/mcp.2009.0585.
9. Dayer MJ, Jones S, Prendergast B, Baddour LM, Lockhart PB, Thornhill MH. Incidence of Infective Endocarditis in England, 2000-13: A Secular Trend, Interrupted Time-Series Analysis. Lancet. 2015;385(9974):1219-28. doi: 10.1016/S0140-6736(14)62007-9.
10. Chirillo F, Faggiano P, Cecconi M, Moreo A, Squeri A, Gaddi O, et al. Predisposing Cardiac Conditions, Interventional Procedures, and Antibiotic Prophylaxis among Patients with Infective Endocarditis. Am Heart J. 2016;179:42-50. doi: 10.1016/j.ahj.2016.03.028.
11. Lalani T, Chu VH, Park LP, Cecchi E, Corey GR, Durante-Mangoni E, et al. In-Hospital and 1-Year Mortality in Patients Undergoing Early Surgery for Prosthetic Valve Endocarditis. JAMA Intern Med. 2013;173(16):1495-504. doi: 10.1001/jamainternmed.2013.8203.
12. Santos DAM, Siciliano RF, Besen BAMP, Strabelli TMV, Sambo CT, Milczwski VM, et al. Changing Trends in Clinical Characteristics and in-Hospital Mortality of Patients with Infective Endocarditis Over Four Decades. J Infect Public Health. 2024;17(4):712-8. doi: 10.1016/j.jiph.2024.02.017.
13. Silva LCS, Castanheira LYFA, Salim MDS, Viegas RFM, Ruivo GF, Cortelli SC et al. Endocarditis – A 27-Year Epidemiological Analysis of Mortality in Brazil. Int J Cardiovasc Sci. 2026;39:e20250124. DOI: https://doi.org/10.36660/ijcs.20250124