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Original article

Mortality from systemic lupus erythematosus in Brazil: evaluation of causes according to the government health database[☆]

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ABSTRACT

Objective: To characterize the causes of mortality in patients with systemic lupus erythematosus (SLE) in Brazil between 2002 and 2011.

Methods: An exploratory ecological study of a time series using data from the Mortality Information System of DATASUS, the Department of the Unified Health System (Brazil's National Health System).

Results: Brazil's SLE mortality rate was 4.76 deaths/10⁵ inhabitants. The mortality rate was higher in the Midwest, North and Southeast regions than in the country as a whole. There were 6.3% fewer and 4.2% more deaths than expected in the Northeast and Southeast regions, respectively. The mean age at death was 40.7 ± 18 years, and 45.61% of deaths occurred between the ages of 20 and 39. Incidence was highest in women (90.7%) and whites (49.2%). Disorders of the musculoskeletal system and connective tissue were mentioned as an underlying cause of death in 77.5% of cases, and diseases of the circulatory system and infectious and parasitic diseases were also noted in fewer cases. SLE was mentioned as an underlying cause of death in 77% of cases, with no difference between the Brazilian regions ($p = 0.2058$). The main SLE-related causes of death were, sequentially, diseases of the respiratory and circulatory systems and infectious and parasitic diseases.

Conclusions: This study identified a need for greater control of risk factors for cardiovascular diseases and a better understanding of the pathogenesis of atherosclerosis in SLE. Infectious causes are still frequent, and management should be improved, especially in the early stages of the disease.

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Mortalidade por lúpus eritematoso sistêmico no Brasil: avaliação das causas de acordo com o banco de dados de saúde do governo

R E S U M O

Palavras-chave:

Lúpus eritematoso sistêmico
Mortalidade
Brasil

Objetivo: Caracterizar as causas de mortalidade em pacientes com lúpus eritematoso sistêmico (LES) no Brasil entre 2002 e 2011.

Métodos: Estudo ecológico exploratório de uma série cronológica com dados do Sistema de Informações sobre Mortalidade do Departamento de Informática do Sistema Único de Saúde (Datasus).

Resultados: A taxa de mortalidade por LES no Brasil foi de 4,76 mortes/105 habitantes. A taxa de mortalidade foi maior nas regiões Centro-Oeste, Norte e Sudeste do que no país como um todo. Houve 6,3% menos e 4,2% mais mortes do que o esperado nas regiões Nordeste e Sudeste, respectivamente. A média de idade ao óbito foi de $40,7 \pm 18$ anos e 45,61% dos óbitos ocorreram entre 20 e 39 anos. A incidência foi maior nas mulheres (90,7%) e nos brancos (49,2%). Os distúrbios do sistema musculoesquelético e do tecido conjuntivo foram mencionados como a causa subjacente de morte em 77,5% dos casos; também foram observadas doenças do sistema circulatório e infecciosas e parasitárias, embora em menor frequência. O LES foi mencionado como a causa subjacente de óbito em 77% dos casos, sem diferença entre as regiões brasileiras ($p=0,2058$). As principais causas de morte associadas ao LES foram, em ordem, doenças dos sistemas respiratório e circulatório e doenças infecciosas e parasitárias.

Conclusões: Este estudo identificou a necessidade de maior controle dos fatores de risco para doenças cardiovasculares e uma melhor compreensão da patogênese da aterosclerose no LES. As causas infecciosas ainda são frequentes e o manejo deve ser melhorado, especialmente nos estágios iniciais da doença.

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Introduction

Systemic lupus erythematosus (SLE), a chronic autoimmune disease whose etiology is not fully known, is diagnosed based on clinical and laboratory criteria and probably results from the interaction of genetic, hormonal, environmental and infectious factors that lead to the loss of immunological tolerance with the production of autoantibodies.¹

According to the literature, mortality in SLE follows a bimodal pattern: in the early stages, death is mainly caused by infection, followed by severe renal or central nervous system (CNS) activity, while in the more advanced stages of the disease, there is an increase in mortality from cardiovascular diseases associated with atherosclerosis, partially related to corticotherapy and chronic inflammation.^{1,2}

According to the Ministry of Health, the death certificate is the standard document for collecting information on mortality and is the source of vital and epidemiological statistics in Brazil.³ The causes of death to be registered on the international death certificate are all those diseases, morbid conditions or injuries that either resulted in or contributed to death and the circumstances of the accident or violence that produced any such injuries. Underlying Cause of Death is defined as the disease or injury that initiated the train of morbid events leading directly to death.³

The Conditions and Causes of Death section of the death certificate is in accordance with the international

death certificate model adopted by the World Health Organization (WHO), which is extremely important given that it contains the underlying cause and injuries leading to death. It is divided into two parts. Part I is for reporting the direct cause of death (immediate cause – line A) and the morbid conditions that led to the cause registered in line A (antecedent or sequential causes – lines B and C, and the underlying cause – line D). Part II is for reporting contributing causes that were not part of the chain defined in Part I, including any diseases or injuries that contributed to death but were not directly related to the pathological state leading to death.³

In Brazil, with its size and the different levels of socio-economic development in its various regions, as well as the different levels of organization and problem-solving capabilities of health assistance networks, the causes of mortality may vary according to region and may reflect differences in care and access to health services between regions. This study therefore aims to determine the causes of mortality in SLE patients in Brazil, according to region, from 2002 to 2011.

Patients and methods

An exploratory ecological study of a time series of 8761 deaths in which SLE was recorded as the underlying or a sequential cause of death was conducted. The data were collected from the File Transfer Protocol of the Mortality Information System (SIM) of the IT Department of the Unified Health System

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