

Short-Term Outcome of Spontaneous Intracerebral Hemorrhage in Algarve, Portugal: Retrospective Hospital-Based Study

Hipolito Nzwalo, MD, MSc,*† Jerina Nogueira, MS,† Ana Catarina Félix, MD,‡
 Patrícia Guilherme, MSc,‡ Pedro Abreu, MS,† Teresa Figueiredo, MD, PhD,†
 Fátima Ferreira, MD,‡ Ana Marreiros, PhD,† Lars Thomassen, MD, PhD,†§ and
 Nicola Logallo, MD, PhD†§

Background: The short-term outcome from spontaneous intracerebral hemorrhage (SICH) is influenced by local quality of care and population specificities. There are no studies about the SICH mortality in southern Portugal. The objective of this study was to describe the predictors of 30-day in-hospital SICH mortality in Algarve, the southernmost region of Portugal. **Methods:** Logistic regression was used to identify predictors of in-hospital death. Kaplan–Meier analysis was used to estimate survival over time based on SICH severity. **Results:** Of the 549 cases, 349 (63.6%) were men; the mean age was 71.4 years. Two hundred seventeen patients (39.5%) did not receive stroke unit (SU) care. The 30-day mortality was 34.4%. Independent predictors of death were older age (odds ratio [OR] = 1.096, 95% confidence interval [CI] = 1.031-2.062, $P = .022$) per additional year, vitamin K antagonists use (OR = 5.464, 95% CI = 2.088-25.714, $P = .043$), admission Glasgow Coma Scale (GCS) score of 8 or lower (OR = 20.511, 95% CI = 7.862-62.168, $P < .0001$) or GCS score of 9-12 (OR = 12.709, 95% CI = 3.078-44.113, $P < .0001$), hematoma volume (OR = 1.037, 95% CI = 1.004-1.071, $P = .028$) per additional milliliter, intraventricular dissection (OR = 1.916, 95% CI = 1.105-4.566, $P = .046$), and pneumonia (OR 12.918, 95% CI = 4.603-24.683, $P < .0001$). SU care was independently associated with reduction of death (OR .395, 95% CI = .126-.635, $P = .004$). Severity correlated with short time to death ($P < .0001$). Sixty-five of the patients (39.2%) died after the seventh day of SICH (“non-neurological deaths”). **Conclusions:** The in-hospital 30-day mortality is high in the region. Admitting more patients to the SU and implementation of preventive strategies of complications can reduce mortality. **Key Words:** Intracerebral hemorrhage—short-term outcome—Portugal—mortality. © 2017 National Stroke Association. Published by Elsevier Inc. All rights reserved.

From the *Department of Clinical Medicine, University of Bergen, Bergen, Norway; †Department of Biomedical Sciences and Medicine, University of Algarve, Faro, Portugal; ‡Neurology Department, Centro Hospitalar do Algarve, Algarve, Portugal; and §Center for Neurovascular Diseases, Haukeland University Hospital, Bergen, Norway.

Received June 17, 2017; revision received August 24, 2017; accepted September 7, 2017.

Address correspondence to Hipolito Nzwalo, MD, MSc, Departamento de Ciências, Biomedical Sciences and Medicine, University of Algarve, Biomédicas e Medicina Edifício 7—Ala Nascente- 3° an, Faro 8005-139, Portugal. E-mail: nzwalo@gmail.com. 1052-3057/\$ - see front matter

© 2017 National Stroke Association. Published by Elsevier Inc. All rights reserved.

<https://doi.org/10.1016/j.jstrokecerebrovasdis.2017.09.006>

Introduction

Intracerebral hemorrhage (ICH) is the second most common type of stroke and is characterized by high severity, with a median 1-month case fatality of 40.4% (range 13.1-61.0).¹ The prevalence of comorbidities and discrepancies in the quality of care may account for the variability in the ICH acute mortality.²⁻⁴ Understanding the determinants of mortality is important to identify strategies to improve the prognosis of patients with ICH. There are only 2 studies in Portugal, both from the same region in the north, addressing the mortality from ICH.^{5,6} These studies, however, have included a small number of cases and have not been specifically designed to identify factors

associated with ICH acute mortality. Our aim was to determine the clinicoepidemiological characteristics, the process of care, and the in-hospital complications associated with the 30-day mortality from spontaneous intracerebral hemorrhage (SICH) in Algarve, Portugal.

Methods

Study Area, Population, and Stroke Care

Algarve is the southernmost region of mainland Portugal with an area of 5,412 km² and a total of 441,468 inhabitants.⁷ Medical care is completely free of charge in the country. A single tertiary public health unit (“Centro Hospital do Algarve”) serves the entire region and has the only 24/7 acute stroke care and neurosurgical emergency in the catchment area. Patients under the stroke code are referred to the Faro Unit, where the only stroke unit (SU) in the region is based.

Patient Selection

Inclusion criteria: The inclusion criteria included a diagnosis of ICH according to the World Health Organization criteria⁸ confirmed by brain imaging—axial computerized tomography or magnetic resonance imaging, and residents from the subregion of Sotavento and Central Algarve who were 18 years of age or older at the time of first-ever or recurrent SICH.

Exclusion criteria: The exclusion criteria included nonspontaneous ICH (traumatic, structural lesions and hemorrhagic transformation), recurrent hospitalization from SICH, and nonresidents of the subregion.

All consecutive hospitalized SICH cases were identified prospectively from October 2014 to January 2016 and retrospectively from January 2009 to September 2014. Daily screening of admitted and discharged patients from the emergency department, SU, neurology, internal medicine, and neurosurgical wards, and weekly screening of all urgent or emergent brain images using the institutional electronic clinical registry and the electronic medical imaging database, respectively, were performed for case identification. An electronic generated list of patients with ICH (International Classification of Diseases-9 [ICD-9] codes 431 and 432) per year was used for completeness verification.

Demographic and Clinical Data

A pilot study with 105 patients (15 patients each year) was performed to evaluate the consistency and reliability of the planned data to collect. Only routine data with an accurate registration of 80% or higher were then extracted from all patients. The following information was extracted: Demographic data (age, gender, place of residence, and social insertion income); prior SICH medical history; prior SICH medications; emergency department admission first evaluation (blood pressure

measurement, Glasgow Coma Scale [GCS] score, and glycemia); ICH score; history of hospitalization in the previous 5 years (indirect indicator of pre-existent diminished physiological function or frailty)^{9,10}; and selected complications (urinary tract infection, pneumonia, deep vein thrombosis, pulmonary embolism, clinical seizure, myocardial infarction, atrial fibrillation, gastrointestinal bleeding, and agitation requiring contention). We used the current standard definitions (Supplement 1).

This was a strictly observational study with no patient contact for its concretization. The need for a written consent from patients for this database and the use of the information for research was waived by the institutional ethics committee and by the National Commission Protection Data and, therefore, these data were not obtained.

Statistical Analysis

Univariate and multivariate analyses were performed to identify demographic, clinical, radiographic, and process of care predictors of intrahospital 1-month death. Student *t*-test, chi-square test, and Mann–Whitney *U*-test were used as appropriate. The discriminatory power of the independent factors associated with in-hospital death (area under the receiver operating curve) was calculated with 95% confidence intervals (CIs). A Kaplan–Meier estimate analysis based on the ICH score was performed to test the effect of SICH severity on 30-day death-free survival. All analyses used SPSS 21 for Windows (IBM Inc., Armonk, NY).

Results

During the 7-year period, 795 cases of ICH were identified. The following 266 patients were excluded from the present study: hemorrhagic transformation of ischemic stroke (141), traumatic ICH (28), subarachnoid hemorrhage (26), tumor (18), cavernoma (10), arteriovenous malformation (9), development malformation (1), cerebral vein thrombosis (1), and primary intraventricular hemorrhage (12).

The demographics and the clinical characteristics of the 549 patients included in the analysis are summarized in Table 1. The mean age was 71.3 years (± 13.0); SICH in young adults (≤ 45 years) occurred in a minority of patients (2.9%). Three hundred forty-nine (64.6%) were men. Hematomas were found in deep subcortical (56.1%) and lobar (27.3%) sites in the majority of the patients. More than one third of the patients (217/39.5%) were not admitted to the SU. The overall case fatality rate was 34.4% (189 fatalities). The deceased group of patients was 3.2 years older ($P = .004$), had a higher proportion of atrial fibrillation ($P = .003$), had a previous history of stroke ($P = .002$), unhealthy alcohol use ($P = .027$), and used vitamin K antagonists ($P < .0001$). Survivors often had less pre-existing high neurological impairment and a modified Rankin Scale score of 3 or higher ($P = .036$). With

Download English Version:

<https://daneshyari.com/en/article/8595601>

Download Persian Version:

<https://daneshyari.com/article/8595601>

[Daneshyari.com](https://daneshyari.com)