



LETTERS TO THE EDITOR

Introducing a neurology department at a local hospital[☆]

Introducción de Neurología en un hospital comarcal

Dear Editor:

It was with great interest that we read the article by Martínez Fernández et al. titled "Impact of introducing neurology into a local hospital in Andalusia".¹

As described in the article, the main purpose of Spain's stroke care plan is to create an organised stroke care system to respond to each patient's needs and optimise the use of healthcare resources so as to guarantee an equal care for all stroke patients. The stroke care strategy adopted by Spain's National Health System (SNS), and those of each autonomous community, are responsible for implementing this plan.^{1–3} The main purpose of these programmes and their 'process-based management' is to offer comprehensive and interdisciplinary patient-focused care. The aim is to draft guidelines and protocols unifying healthcare practices so that patients receive the same quality of care regardless of the location and the attending medical personnel. Equal care is achieved in this way since not every patient can be cared for by the most qualified specialist in each specific illness anywhere in Spain and at any point during the process.^{4–7} However, both the design and the conclusions from this study warrant comment. In an evaluation of care for stroke patients, doctors did not assess NIHSS scores, course of stroke, or patient comorbidity; the latter is a fundamental factor in the decision of whether to refer patients to the internal medicine or the neurology department, and comorbidity also plays a crucial role in all study parameters (mean stay, mortality, dependence, and institutionalisation).

Results show that patients not referred to the neurology department were a mean of 10 years older than the other group, which is indicative of higher comorbidity. Although

the isolated effect of age was assessed when the variable was included in the multivariate analysis, this was not the case for intercurrent diseases, which were not studied.

It is surprising that relative risk of death would be 8 times higher in patients *not* attended by neurologists; if this were really true, it would point to a severe problem for stroke care in the hospital in question.

Confounding or interaction factors were not assessed for any variables, referring to both study variables and the comorbidities omitted by the study. However, both age and comorbidities can act as confounding or interaction factors and may consequently modify odds ratios in both directions, and especially the OR of the main factor in this study, neurological care. By this logic, neurological care may improve outcomes in patients without comorbidities but not those with comorbidities, or vice versa.

In addition, it is surprising that the factor 'neurological care' was coded to yield an OR < 1; interpreting OR magnitude for a protective factor is difficult, and therefore using its inverse and temporarily recoding the variable is recommendable.⁸

Odds ratios for mortality and dependency with neurological care are 0.04 and 0.14, respectively; the OR for mean stay is not mentioned and the variable has no significant effect on institutionalisation. These are minimum values that may be negligible for practical purposes, mainly because Nagelkerke's R^2 value is not included in the results.⁸

In our opinion, despite this being a very interesting study that required painstaking data collection, its conclusions may be spurious because the data mentioned above were not assessed.

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[☆] Please cite this article as: Gros Bañeres B, Herrero Castejón A, Ascaso Martorell C, Bertol Alegre V. Introducción de Neurología en un hospital comarcal. *Neurología*. 2014;29:184–185.

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Emergency stroke care in Spain's 'Stroke Belt'[☆]

La atención urgente al ictus en el «Cinturón del ictus» español

Dear Editor,

It was with great interest that we read the article by Martínez Fernández et al.¹ illustrating a relevant problem with emergency neurological care for stroke.

It is well-known today that providing specialised neurological care, especially in stroke units, significantly decreases mortality in stroke patients. Incorporating these units into local health systems is highly recommended, especially in Andalusia. Nevertheless, several comments should be made about this study. First, it contains major methodological problems that limit the validity of its results. The study compares 2 completely (and significantly) different populations, one with a mean age of 65, and the other with a mean age of 77. As the article points out, age and associated comorbidities are fundamental prognostic factors. Regarding the different types of strokes, it is striking that there were no deaths among the 13 cases of intracerebral haemorrhage in the first group, whereas 3 out of 4 died in the second group. This shows that risk levels were clearly different and that patient assignment to one group or the other was not random. Measuring stroke severity using a retrospective analysis of patient medical histories and the modified Rankin scale does not appear to be a suitable method. Lastly, performing a multivariate analysis that includes numerous subgroups and a sample size of approximately 50 patients per group also seems questionable.

[☆] Please cite this article as: Castilla Guerra L, Álvarez Suero J. La atención urgente al ictus en el «Cinturón del ictus» español. *Neurología.* 2014;29:185–186.

Secondly, Spain's 'stroke belt' refers to specific geographic areas, and mainly Andalusia and Murcia.^{1,2} In these regions, as in the south-eastern United States, we find high rates of stroke mortality in areas which also show higher mortality rates due to coronary artery disease and heart failure. It is obvious that hospital care, as we have stated, plays a part in mortality, but we probably should also be searching for other causes outside of our health-care centres. For example, we might examine conditions in schools, households, and municipalities, years before a patient's stroke occurs. Numerous studies have been carried out in the United States, where there is true concern for examining the causes of regional differences. The latest study of 30 239 subjects, named Reasons for Geographic and Racial Differences in Stroke (REGARDS), shows that only a small percentage of the increase in stroke is due to traditional risk factors, and that socioeconomic and health conditions during an individual's adolescent years will play a key part in increased stroke incidence and mortality.^{3,4}

In any case, applying measures that will decrease stroke mortality must be a goal for everyone, including the health authorities.

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