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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.

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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Reply to emergency stroke care in Spain's "Stroke belt"[☆]

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

Dear Editor,

I have carefully read the comments on the article "Impact of introducing neurology into a local hospital in Andalusia". When evaluating this article, we must be mindful that it is neither a clinical trial nor a prospective study. It simply describes retrospective data gathering for the purpose of studying a specific situation that is very common in Andalusia: stroke care in hospitals which do not have and have never had neurologists on staff. We felt this provided an excellent opportunity to compare data from the first year a neurologist was working in one such hospital, keeping in mind that the situation probably resembled that before the neurologist was present. The situation may have evolved in later years as specialists in internal medicine expanded their knowledge due to contact with the neurologist. Our intention was to gain an understanding of the true situation of stroke patients in hospitals without neurologists.

While it is true that a retrospective observational study has less validity than a prospective study or clinical trial, there was probably no other way to perform this particular

study. The article clearly explains that the groups differed in their baseline characteristics since assignment was not random. Younger patients with more severe stroke (intracranial haemorrhage) were habitually assigned to the neurology department, whereas older patients and those with TIA were referred to internal medicine. When the neurologist was not present (due to vacations, conferences, etc.), all stroke patients were referred to internal medicine.

The study examined whether age or stroke subtype (ischaemic or haemorrhagic) affected mortality, dependency, or institutionalisation. We concluded that the stroke subtype displayed no effect, and that while age did not affect mortality, it did have an impact on dependency and institutionalisation, which both increased with the patient's age. The beneficial results of providing neurological care were adjusted for patient age and stroke subtype, and they are therefore independent from these factors.

'Spain's stroke belt' does indeed refer to a geographical area (Andalusia and Murcia) with a higher stroke-related mortality rate. In contrast, the REGARDS study analysed risk factors associated with the increase in stroke incidence in specific regions of the United States. Incidence and mortality are distinct concepts that should not be used interchangeably. It is clear that a higher stroke incidence rate must be linked to risk factors and not to the presence or absence of neurological care. Likewise, it is obvious that increased mortality would be associated with poorer patient care.

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