EDITORIAL

On the feasibility and usefulness of basic life support ambulances in prehospital care for stroke: Does type of ambulance matter in acute stroke?

Sobre la posibilidad y conveniencia de la atención prehospitalaria al ictus por unidades de soporte vital básico: ¿importa el tipo de ambulancia en el ictus agudo?

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This question we ask ourselves when transferring an acute stroke to hospital has not been answered until now. This issue of EMERGENCIAS publishes an article that analyzes the differences between transporting stroke patients in a basic or medicalized ambulance.[1] In the "stroke care chain", the pre-hospital time is the longest, and within this time, transport is the link that depends on the health care professionals and, therefore, the one for which we have the greatest responsibility and the easiest way to improve it. When a medicalized ambulance is chosen, the aim is to prevent complications and control the relevant constants in stroke,[2] whereas transport in a basic ambulance with health technicians is cheaper and, as there are more of them, they are more available in the vicinity of the stroke and it is faster, which is confirmed in the article we are discussing. The dilemma is therefore between efficacy and efficiency and, above all, between prevention of complications and speed of treatment.

The strongest results of Solà et al.[1] refer to ischemic reperfused strokes, where ambulance staffing does not influence functional outcome and mortality. Although this is not generalizable to all strokes, it supports the usual practice of transporting most strokes in nonmedicalized ambulances, with trained personnel but without a physician. In the absence of differences, basic nonmedicalized ambulances are cheaper and faster. By arriving earlier at the hospital, they improve the time to effective repermeabilization treatment, which is the main prognostic factor in ischemic stroke. Medicalized ambulances also save some hospital time as blood sampling and ECGs are performed during transport. This time is further reduced in other countries where the transport team includes the CT scanner and physician, and initiates fibrinolysis before arrival at the hospital.[3,4]

Factors for which a medicalized ambulance is usually requested are respiratory or hemodynamic problems, severe decrease in alertness, convulsions, and any life-threatening condition. Vomiting can also be included, as it is a cause of aspiration pneumonia and, as Solà et al.[1] find, is frequent. In this article, medicalized ambulances seem to have been reserved for more severe strokes, among which there are more hemorrhages, and in which early deterioration is more frequent than in ischemic strokes.[9] It is surprising that they do not have worse mortality or functional outcomes despite being more severe and arriving later than those arriving in non-medicalized ambulances. Therefore, a protective effect of the medicalized ambulance in more severe strokes cannot be excluded.

Another reassuring finding is the low incidence of complications and the absence of cardiorespiratory arrest among the almost 23 000 patients transferred between the two types of ambulance. During the transport of acute coronary syndrome, the percentage of complications is 1-2%, like that of stroke in the aforementioned series1 and there are also no differences in prognosis between medicalized and non-medicalized transport.[5]

The population is aware of the usefulness of urgent medical transport for stroke, as only 13.5% attended by their own means. This is good news since medical transportation allows earlier arrival at the emergency department, facilitates diagnosis by telemedicine before arrival,[6] selects the most appropriate destination hospital for treatment, and improves the prognosis of stroke.[7] However, young people who suffer a stroke, especially women, use the ambulance less and arrive at the emergency department later.[8]

Helicopter transport is less frequent and has its own characteristics: it is much more expensive, can save time over long distances, is available only when there is light and the weather is favorable, and is medicalized, but in-flight treatment is difficult. Helicopter transport seems to reduce stroke sequelae but not mortality compared to ambulance transport.[10]

The strength of the data reported by Solà et al.[1] lies

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in the size of the sample, the 6 years covered by the study and the participation of several hospitals, but with the homogeneity of the same health system. In contrast, those transferred by medicalized ambulance are a very small group compared to those transferred by basic ambulance and have differences in their clinical characteristics, which limits comparisons between the two types of transport. It cannot be ruled out that in non-reperfused ischemic strokes or hemorrhagic strokes, whose survival or functionality at 90 days was not measured, there are differences between initial care by basic ambulances or by medicalized ambulances.

In summary, the article by Solà et al.[1] in this issue of EMERGENCIAS issue of EMERGENCIAS supports the usual practice of transferring strokes to hospital in nonmedicalized ambulances, except in selected more severe cases, as it saves time until cerebrovascular repermeabilization treatment, is cheaper, and few complications occur.

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