

Perception and Attitude towards Stroke by Professionals of Emergency Medical Service in an Urban City in Southeastern Brazil

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Introduction: Stroke awareness by lay people in general is poor. It has been estimated that only as much as one third of patients with acute stroke reach emergency medical services within two hours of onset of their symptoms. We aimed to assess perception of and attitude towards a person with an acute stroke by professionals working in mobile unit of emergency medical service in the city of Campinas, Brazil. *Material and Methods:* The study was conducted during VII Stroke Workshop of Campinas in November 2007. We used an anonymous self-report questionnaire with a clinical case of an acute stroke with duration of 50 minutes. We asked two open-ended questions to gauge perception and attitude. *Results:* One-hundred forty-nine of 205 (73%) participants answered the questionnaire; 49% were women, average age of 37 years (range 21–59). Ninety (60%) were professionals allied to medicine (nurses, health auxiliary, dentists), six (4%) were physicians, and 53 (36%) were other professionals (secretary, driver). In regard to perception, 142 of 149 (95%) had a correct perception of stroke. In regard to attitude, in general, the basic support measures have been pointed out, but only one (0.5%) mentioned an issue of time less than 3 hours for thrombolysis, four (2%) mentioned the possibility of thrombolysis, and 12 (8%) requested computed tomographic examination. *Discussion:* It appears that professionals allied to medicine can diagnosis stroke of anterior circulation; however, they do not have thrombolytic therapy in mind, and this should be considered the default treatment for all patients with stroke within the “therapeutic window.” **Key Words:** Medical education—health policy—primary care.

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Stroke is the leading cause of death in Brazil. It is also the main cause of nontraumatic physical, cognitive handicap, resulting in premature retirement. Pontes-Neto¹ and Novak and colleagues² showed that lay people do not promptly recognize clinical features of an acute stroke event in Brazil. This is not exclusive of the Brazilian lay population; limita-

tions on recognizing stroke symptoms are also seen in Australia,³ India,⁴ and the United States.⁵ Failure to recognize the symptoms may have drastic consequences, especially if there is a delay in seeking medical attention. It has been estimated that only as many as one third of patients with acute stroke reaches emergency medical services (EMS) within two hours of onset of their symptoms.^{6–8}

Serviço de Atendimento Móvel de Urgência (SAMU-192) is an emergency mobile unit service part of unified health system (SUS) policy in Brazil. SAMU-192 in Campinas provides 24-hour online support, a dispatch mobile unit, and transfer to a reference center if necessary. Campinas is an urban city with more than one million people located in southeastern Brazil. In a period of three months in 2007, SAMU-192 received on average 6,000 phone calls monthly; of those, 80 were cases of stroke. The aim of this paper is to

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assess perception of and attitude towards a person with an acute stroke by professionals of SAMU-192 in the city of Campinas.

Material and Methods

Subjects

This survey was carried out with professionals of SAMU-192 during VII Stroke Workshop of Campinas in November 2007. This workshop was sponsored by Boehringer-Ingelheim and it was dedicated to professionals of SAMU-192 of Campinas, who were all invited to participate; 205 professionals attended the meeting.

Instrument

We used an anonymous self-report questionnaire. The heading has demographic data with age, sex, and profession. We elaborated a clinical case of stroke with risk factors, clinical features of middle cerebral artery occlusion, and duration of 50 minutes. To gauge perception and attitude, we elaborated two open questions as follows.

Clinical case

José, 51-year-old, smoker, has arterial hypertension, type II diabetes, and coronary artery disease. He was brought by his wife to the basic health unit at 9:20 AM with speech difficulties, paralysis of the right side of his face, weakness, and loss of sensibility of his right arm and leg. José's wife stated that he was fine the night before and suddenly became unwell at 8:30 AM during his breakfast.

Questions:

What is your diagnosis for this case?

What would you do in this case? Why?

The answers were categorized and grouped accordingly.

Table 1. Perception of a stroke case by the three groups of professionals

Diagnosis	Results, N (%)		
	Physicians 6 (%)	PAM 90 (%)	Other professionals 53 (%)
Stroke	2 (33.3)	59 (66.8)	31 (57.7)
Ischemic stroke	3 (50.0)	9 (10.0)	5 (9.6)
Hemorrhagic stroke	—	2 (2.2)	—
Possibly a stroke	—	12 (13.3)	11 (21.2)
TIA + stroke	1 (16.7)	4 (4.4)	1 (1.9)
AMI + stroke	—	1 (1.1)	—
Convulsion	—	—	2 (3.8)
Hypoglycemia	—	1 (1.1)	—
Did not know/ no answer	—	1 (1.1)	3 (5.8)

TIA = transient ischemic attack; AMI = acute myocardial infarction.

Questionnaire application

We approached all the participants of the workshop at the entrance and asked them to participate in the survey. They were asked to answer individually and to return the questionnaire right away. The condition was the same and it took an average of 10 minutes for them to answer.

Results

One-hundred forty-nine of 205 (73%) participants answered the questionnaire; 49% were women, average age of 37 years (range 21–59). Ninety (60%) were professionals allied to medicine (PAM–nurses, health auxiliary, dentists), six (4%) were physicians, and 53 (36%) were other professionals (secretary, driver). Table 1 shows the results of perception of the stroke case by these three groups of professionals. Table 2 provides the result for the attitude towards the stroke case by these three groups of professionals.

Discussion

This is a cross-sectional prospective survey using a convenience sample of professionals working at SAMU-192 in the city of Campinas, Brazil, during a training course. We have a very low number of physicians, which limits our generalization. Nevertheless, the singularities of answers allow us to see some aspects of perception of and attitude towards an acute case of stroke.

Overall, a great majority perceived the case as related to stroke. This is reassuring, especially in the other professionals, e.g., secretaries and drivers. Compared with results from the community,¹ this is quite positive. However, there is a potential bias because the study was conducted during a stroke meeting, and not in the field.

In regard to attitude, there were several possibilities and none were justified. Most attitudes would be considered correct; however, it was remarkable that in a total of 149, only one mentioned issue of time less than 3 hours, four mentioned the possibility of thrombolysis, and 12 requested computed tomographic examination. This is possibly the reflection of what took place previously in emergency services of our city not long ago. During the workshop, most participants were unaware of the possibility of thrombolytic treatment in the city because the protocol has been only recently implemented in the main assistance and teaching hospitals of the city.

In conclusion, it appears that PAM can diagnose stroke of anterior circulation; however, they do not have thrombolytic therapy immediately in mind, which should be considered the default treatment for all patients with stroke within the "therapeutic window." To improve the stroke chain of survival, there is a need to provide a continuous education, starting at the reference center, with adoption of a protocol including the use of a thrombolytic agent. Improvement of health care delivery at the

Table 2. Attitude towards a stroke case by these three groups of professionals

Attitudes	Results N (%)		
	Physicians 6 (%)	PAM 90 (%)	Other professionals 52 (%)
Assess vital signs	—	45 (50.0)	10 (19.2)
Give oxygen	1 (16.7)	43 (47.6)	8 (15.4)
Get venous line	1 (16.7)	25 (27.8)	4 (7.7)
Put patient on elevated decubitus	1 (16.7)	18 (21.1)	2 (3.8)
Assess blood pressure	—	13 (14.4)	5 (9.6)
Assess glycemia	1 (16.7)	7 (7.9)	1 (1.9)
Apply Stroke scale (such as LAPSS, Glasgow Coma Scale)	—	6 (6.7)	2 (3.8)
Assess temperature	—	3 (3.3)	2 (3.8)
Perform a neurological examination	—	3 (3.3)	2 (3.8)
There was mention about time (< 3 h)	—	—	1 (1.9)
Referrals			
to physician	1 (16.7)	38 (42.2)	14 (26.9)
to hospital	2 (33.3)	15 (16.7)	18 (34.6)
to computed tomography	—	10 (11.1)	2 (3.8)
to thrombolysis	1 (16.7)	1 (1.1)	2 (3.8)
to SAMU	—	—	2 (3.8)
to the supervisor of SAMU	—	2 (2.2)	—
to physician and hospital	—	1 (1.1)	—
no referrals	2 (33.3)	18 (20.0)	8 (15.4)
did not answer	—	5 (5.6)	7 (13.5)

reference center sets a benchmark and brings new perspective that the catastrophic events of stroke can be changed, reducing its morbidity and psycho-social burden.

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