Online Information about Stroke – A Soft Challenge for Critical Care Professionals

Septimiu-Daniel Popescu¹, Mihaela Dănilă², Valentin Nădășan^{3*}

¹ Department of Radiology and Imaging, Emergency County Hospital Tîrgu Mureş, Romania

² Cardiovascular and Transplant Emergency Institute Tîrgu Mureş, Romania

³ University of Medicine and Pharmacy, Tîrgu Mureş, Romania

Keywords: stroke-related websites, consumer health, health literacy, stroke recognition, pre-hospital delay time

Received: 27 August 2018 / Accepted: 08 September 2018

According to "The Burden of Stroke in Europe" report, Romania had, in 2015, the highest incidence and highest mortality due to stroke per 100,000 inhabitants [1]. Moreover, the Central and Eastern European Stroke Society Working group reported that, in 2015, in Romania, only about 1% of stroke patients had access to stroke units [2].

🕏 sciendo

Critical care professionals are familiar with the phrase "time is brain" and are well aware that even a couple of minutes delay in delivering thrombolytic intravenous treatment or endovascular thrombectomy can have an enormous impact on patients' survival rates and the length of disability-free life [3,4]. While studies have observed significant improvement regarding the time from onset of stroke symptoms to upto-date in-hospital therapy [5], access to treatment in specialized stroke units is far from optimal, and thrombolysis remains under-performed, especially in Eastern European countries [1]. Pre-hospital delay, particularly the time from the onset of symptoms to a decision to call the emergency medical services is considered a major cause of missing the therapeutic window of opportunity in the management of acute stroke [5-7]. Reported studies have identified a large range of reasons that influence pre-hospital delay time. These include socio-demographic characteristics, particular symptoms or their severity, and most importantly, the ability of patients' or bystanders' to recognize stroke symptoms at an early stage and promptly activate emergency intervention systems [8-10]. Both the European Stroke Organization and the American Stroke Association (ASA) strongly recommend the implementation of health education programs to raise the public's awareness and level of knowledge and preparedness in cases of stroke [11,12], but neither make explicit reference to the internet, the most pervasively used source of health-related information.

In a systematic assessment of the quality of stroke-related information, derived from a sample of 50 Romanian and Hungarian websites, we checked how frequently the ASA's basic stroke signs and recommendations ("F-A-S-T" acronym) were reported.

While speech difficulties were mentioned on 92% of the websites as a sign that may signal the onset of stroke, arm weakness and facial drooping were reported on only 78% and 60% of the websites. Furthermore, only 60% of the websites have specified that stroke is a medical emergency and only 74% of them urged users to call the emergency service without delay. It is also worth mentioning that despite the recognition of medical hoaxes, rumors and frauds [13], only 22% of the websites warned users not to rely on diagnostic or treatment methods that are not scientifically validated.

Given that 71% of internet users in Europe have used the internet to gain health-related information [14], and that a correlation between using the internet for health information and stroke symptoms recognition has been reported [15], it would be wise to contribute as much as possible to the improvement of the quality of online stroke-related information and employ the vast educational potential of the electronic media to reduce pre-hospital delay time in the management of stroke. After all, good online stroke-related information is brain too.

^{*} Correspondence to: Valentin Nădăşan, University of Medicine and Pharmacy, Tirgu Mureş, 38 Gheorghe Marinescu Street, Tirgu Mureş, 540139, Romania. E-mail: valentin.nadasan@umftgm.ro

148 • The Journal of Critical Care Medicine 2018;4(4)

We thank Sorin Săndulache MD, PhD, neurologist at Colentina Hospital, Bucharest, Romania for his valuable input in the development of the quality benchmark for stroke-related websites. Also, we thank Dalma Kasza, David Maior, and Alex-Otniel Popescu, medical students at the University of Medicine and Pharmacy of Tîrgu Mures, Romania for their contribution to data acquisition.

CONFLICT OF INTEREST

None to declare

- Stroke Alliance For Europe (SAFE). The Burden of Stroke in Europe – the challenge for policymakers. Online: http:// strokeeurope.eu/ Accessed 15.08.2018.
- Budincevic H, Tiu C, Bereczki D et al. Management of ischemic stroke in Central and Eastern Europe. Int J Stroke. 2015;10 Suppl A100:125-7.
- 3. Meretoja A, Keshtkaran M, Saver JL et al. Stroke thrombolysis: save a minute, save a day. Stroke. 2014;45:1053-8.
- Saver JL, Goyal M, van der Lugt A et al. Time to Treatment With Endovascular Thrombectomy and Outcomes From Ischemic Stroke: A Meta-analysis. JAMA. 2016;316:1279-88.
- Evenson KR, Foraker RE, Morris DL, Rosamond WD. A comprehensive review of prehospital and in-hospital delay times in acute stroke care. Int J Stroke. 2009;4:187-99.
- 6. Faiz KW, Sundseth A, Thommessen B, Rønning OM. Factors related to decision delay in acute stroke. J Stroke Cerebrovasc

Dis. 2014;23:534-9.

- Pulvers JN, Watson JDG. If Time Is Brain Where Is the Improvement in Prehospital Time after Stroke? Front Neurol. 2017;8:617.
- 8. Bouckaert M, Lemmens R, Thijs V. Reducing prehospital delay in acute stroke. Nat Rev Neurol. 2009;5:477-83.
- 9. Jiang B, Ru X, Sun H et al. Pre-hospital delay and its associated factors in the first-ever stroke registered in communities from three cities in China. Sci Rep. 2016;6:29795.
- 10. Kim YS, Park SS, Bae HJ, et al. Stroke awareness decreases prehospital delay after acute ischemic stroke in Korea. BMC Neurol. 2011;11:2.
- 11. Kobayashi A, Czlonkowska A, Ford GA et al. European Academy of Neurology and European Stroke Organization consensus statement and practical guidance for pre-hospital management of stroke. Eur J Neurol. 2018;25:425-433.
- Powers WJ, Rabinstein AA, Ackerson T et al. 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. Stroke. 2018;49:e46-e110.
- Nădăşan V. Should Critical Care Professionals Take Hoaxes/ Rumours Seriously? J Crit Care Med (Targu Mures). 2016;2:205-6.
- 14. Higgins O, Sixsmith J, Barry MM, Domegan C. A literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective. Stockholm: ECDC; 2011. Online: https://ecdc.europa.eu/sites/portal/files/ media/en/publications/Publications/Literature%20review%20 on%20health%20information-seeking%20behaviour%20 on%20the%20web.pdf Accessed 15.08.2018.
- 15. Mata J, Frank R, Gigerenzer G. Symptom recognition of heart attack and stroke in nine European countries: a representative survey. Health Expect. 2014;17(3):376-87.