Case report

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Less Help-Seeking Behaviour in Female Patients Exhibiting Stroke or TIA - Related Symptoms

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Abstract - Several studies have shown sex differences regarding help-seeking behaviour in stroke and transient ischemic attack [TIA] patients. Women are less likely to perceive their symptoms as requiring immediate hospital care. They are also more inclined to involve friends and family in decision-making and help-seeking. Delaying transport to the hospital is partly due to behavioural and socio-demographic factors of female patients. These impact help-seeking behaviour and prolong prehospital delay, which may affect patient outcomes. We present a 69-year-old woman exhibiting neurological symptoms indicative of a cerebrovascular event, refusing to go to the hospital. The Emergency medical service [EMS] team made the initial medical assessment, outlining the need for immediate transport. Our patient did not view her symptoms as worrying but finally agreed to go to the hospital. She was persuaded by her children, who had an active role in the patient's decision-making process. Factors that affected help-seeking behaviour and prehospital delay were analysed, accompanied by a review of literature related to the subject.

Keywords: clinical decision-making; help-seeking behaviour; ischemic stroke; ischemic attack, transient; women

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Introduction

Stroke is among the leading causes of death and disability in the world. In Croatia, it is the second leading cause of death [1]. The incidence of stroke is higher in men until an advanced age when incidence rates of stroke in women surpass those of men [2]. Women account for the majority of stroke events and stroke mortality [3]. This can be partially attributed to older age on stroke onset. Women are also more likely to have poor stroke outcomes and have longer door-to-treatment times. According to Mandelzweig and associates, the risk of prehospital delay is three times greater in women [4,5]. A systematic review by Dolmans and associates showed that more than a third of TIA patients delay seeking medical attention for more than a day. Since patients suffering from a TIA have a high short-term risk of developing stroke, early recognition of symptoms and prompt treatment is essential for favourable patient outcomes [6]. The reasons for poorer stroke-related outcomes in women are not yet completely understood. Several studies, such as the WHO MONICA Project and the International Stroke Trial, show higher case fatality in women [7,8]. Solitary living, associated with older age in which women pres-

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ent with stroke, reduces the chance of having a witnessed event [5]. This impacts reaction time and increases prehospital delay.

This study aimed to present our experience of a female patient exhibiting cerebrovascular event-related symptoms and refusing to go to the hospital. Factors that affected help-seeking behaviour and prehospital delay were analysed, accompanied by a review of literature related to the subject.

Subjects and Methods

The Emergency medical service (EMS) in Croatia is county-organized. One EMS team consists of a licensed medical doctor, a registered nurse, and a driver for the vehicle. All calls to the EMS are processed according to the triage criterion by the central call unit, which dispatches the first available team to the caller's location. The physical exam performed by the EMS team doctor is focused on the main complaint. Vitals are also measured. Medical history is taken from the patient or next of kin. The EMS may transport the patient to the nearest medical facility. In case of a life-threatening condition, immediate transport is indicated.

This article presents a 69-year old female patient exhibiting stroke and transient ischemic attack (TIA) related symptoms, refusing transport to the hospital after symptom onset. A brief history was taken, and a clinical investigation was conducted in the patient's home. Following a clinical examination according to the "face, arms, speech, time" (FAST) protocol, a working diagnosis of a cerebrovascular event was formulated. The ABCD^2 Score for stroke risk after TIA was calculated. Further neurological examination concentrated upon gait, balance, and other clinical signs. Vitals were also taken. Subsequently, the patient was encouraged to heed the advice of the emergency medical service (EMS). Family members, who were informed of the severity of her symptoms, were also included in persuading the patient to accept emergency medical transport to the hospital.

Results

The call to the emergency medical service, made by a family member, was in the afternoon. On arrival, history was taken from the patient and family members. It was determined that symptom onset was in the morning. She had been acting "strange" the entire day, and her speech had been slurred since morning. The patient downplayed her symptoms, not viewing them as worrying. She had a history of hypertension and was an occasional smoker. Her vital parameters were within the normal range, and she was hemodynamically stable. A brief neurological exam conducted according to the FAST acronym revealed a left-sided paresis. The patient presented with the following: lowered left mouth corner, straightened left nasolabial cleft, left arm weakness, asymmetrical gait with typical circumduction movement of the affected side, and slurred speech. The ABCD^2 Score was 6, which placed her in a high-risk category for stroke after a suspected TIA. As it was evident that her symptoms were alarming, the patient was informed that immediate transport to the hospital was required. However, she continued to downplay her symptoms, insisting that she would not leave as she did not consider her symptoms severe. As we had no success persuading the patient, we turned to her children. They were aware of the potential severity of the symptoms and inquired about their doubts regarding the situation. After confirming their suspicion, they started urging her to seek hospital care. Finally, the patient was convinced to accept transport to the hospital.

Discussion

Our patient is an example of a female patient exhibiting symptoms indicative of a TIA or stroke who did not perceive the severity of her symptoms and was reluctant to be transported to the hospital where she would be provided with immediate care. The EMS was called several hours after symptom onset, contributing to the longer prehospital delay. At first, her behaviour was described as strange. Subsequently, the family did not initially view the signs as alarming.

A study by Exalto and associates showed that the caller in men presenting with TIA/stroke symptoms was most often the partner. For women, a non-spousal family member or a neighbour was most often the caller. How-

ever, female patients with an incorrect stroke/TIA diagnosis predominantly contacted the EMS themselves [9]. In our case, the caller was a non-spousal family member, which is more common for female patients, according to Exalto and associates.

There are many factors contributing to prehospital delay in stroke and TIA patients. These include clinical, demographic, social, behavioural, and perceptual characteristics. Several studies identifying the previously mentioned factors found no evidence of clinically significant differences in prehospital delay regarding sex. On the other hand, several studies found evidence that women had a longer delay in hospital arrival than men [4,5]. Chandratheva and associates found that median delay was longer in both TIA and minor stroke female patients. Women presenting with TIA had a median delay of 4.9 hours compared to men with a delay of 4.0 hours. Similarly, women suffering from minor stroke had a median delay of 7.0 hours, compared to men with 3.5 hours [10]. Mandelzweig and associates found that the risk of prehospital delay was three times greater in women [4,5]. Because of delayed hospital arrival, many stroke patients are ineligible for ischemic stroke reperfusion therapy [11,12].

One might assume that knowledge of stroke symptoms would be among the main factors in predicting prehospital delay. However, research has shown otherwise, as knowledge of stroke symptoms has not been a consistent predictor of early hospital arrival [13,14]. Moreover, it has been shown that women recognized typical stroke symptoms more frequently than men, which is also true among stroke survivors. However, men arrive at the hospital in a shorter period starting from symptom onset [15-17]. A study by Vuković and associates showed good knowledge of stroke signs and risk factors for stroke among neurological outpatients in Croatia [18]. According to Zrelak and associates women were more likely to experience nonfocal symptoms than men. The same study found that men were more likely to take an active role in the decision-making process to seek care. Conversely, women were inclined to first confer with non-spousal family members [19].

The study by Mandelzweig and associates analysed the association between the time of symptom awareness to seeking help and various characteristics (demographic, clinical, behavioural, etc.). They found that shorter time intervals were associated, among others, with sudden onset of the event, motor weakness, and speech disturbance. On the other hand, longer time intervals were associated with dizziness, headaches, and relatively mild strokes. They analysed risk factors for arriving at the hospital three or more hours after symptom onset [4].

A systematic review by Dolmans and associates identified four factors associated with a shorter delay, notably a longer duration of symptoms, motor symptoms, a higher $ABCD^2$ score (age $\geq$ 60 years, BP $\geq$ 140/90 mmHg, clinical features of the TIA, duration of symptoms, history of diabetes) and correct patient's recognition as a possible ischemic cerebrovascular event [6]. Our patient presented both with lateralized motor weakness and speech disturbance. The $ABCD^2$ Score was high, and the symptoms had already lasted for most of the day. According to Mandelzweig and associates and Dolmans and associates these factors are associated with a shorter time interval from symptom onset to hospital arrival [4,6]. However, our patient started exhibiting symptoms in the morning, whereas the call was in the afternoon. The same study by Mandelzweig and associates identified other factors related to shorter time intervals as someone other than the patient first noticing the symptoms, advice by others to seek help, and initial contact with an emergency medical service [4]. Our patient was in the presence of her children, and they placed the emergency call. Therefore one might conclude that the deciding factors in shortening her prehospital delay were not clinical but demographic and social. So, if she was alone in her house, not viewing her symptoms as severe, it is doubtful that she would have placed the emergency call in a short time, if at all. The same study found a three times greater chance of prehospital delay for fe-

male stroke patients. Even though they found that fatigue was associated with delay in both men and women, perceived control of symptoms was associated with a much higher risk in women, increasing their risk of delay fivefold [4]. Our patient did not attempt to self-medicate and remedy her symptoms but was unwilling to acknowledge that the symptoms carried any significant meaning. A study by Beal and associates investigated women's behavioural response after stroke-related symptom onset. Various behaviours were reported: resting, self-medicating, continuing with usual activities, and trying to hide symptoms. Women also expressed concern about troubling other people with their symptoms and worried about the effect of their symptoms on family members [20]. By accepting transport at her children's insistence, our patient also probably prioritized the effect of the situation on her family members.

One study analysing intrinsic factors that influence help-seeking behaviour identified five themes of help-seeking: influence of knowledge, views about seriousness, attitudes towards others, ideas about illness and health, and beliefs about the emergency medical system. Furthermore, the same study identified four types of action pertaining to help-seeking behaviour: asking for medical help, asking for non-medical help, wait-and-see, or a chain reaction (sequential actions, such as going home, consulting with family, and then calling a general practitioner) [21]. Our patient may have chosen a wait-and-see strategy. None of the participants in the mentioned study, who had chosen a wait-and-see strategy, imagined that waiting could have further negative consequences. One would hypothesize the same of our patient. In general, the study found that symptom development was seen as significant [21].

A study by Moloczij and associates introduced a model of help-seeking behaviour after stroke, including recognition, interpretation, negotiation, and action. The steps are interconnected and do not follow a linear pattern according to the presented model. They are influenced by various factors: making sense of the symptoms, the presence of others, perception of medical services, and maintaining a sense of normality [22]. Our patient may have attempted to preserve a sense of normality by denying the seriousness of her symptoms.

Taking into account the studies that show a better knowledge of stroke symptoms among the female population one might assume that women pass the step of recognition relatively quickly [15,16]. Disease recognition could be negatively impacted by elderly female patients living alone, which reduces the chance of a witnessed event [5]. The delay is heavily influenced by Moloczij's steps of interpretation and negotiation. It is furthermore influenced by not wishing to worry family members, being more inclined than men to confer with family members before actively making a decision, having a fivefold risk of delay when self-medicating, and having a perceived control of symptoms [4,19,20].

Many complex demographic, behavioural, social, and clinical factors influence help-seeking behaviour that impacts prehospital delay. Numerous studies have observed different responses in female stroke or TIA patients, which may partly explain less help-seeking behaviour and longer prehospital delay in women. Our patient is an example that supports the observed behaviour relating to female patients exhibiting stroke and TIA-related symptoms. She is an example of a probable wait-and-see strategy and dismissing the severity of her symptoms despite evident clinical signs. Furthermore, she was influenced by non-spousal family members, which led to the decision to accept emergency medical transport to the hospital. In this case, we conclude that socio-demographic factors were crucial in shortening prehospital delay. Furthermore, the role of family members in the decision-making process should be recognized as a potentially helpful tool in persuading female patients exhibiting stroke and TIA symptoms to seek immediate medical care.

To summarize, stroke and TIA events are significant public health concerns. Identifying negative factors on help-seeking behaviour may shorten prehospital delay and improve patient outcomes. Sex differences should be taken into account when investigating these factors.

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Conflict of Interest

None to declare.

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