AWARENESS OF STROKE AMONG GENERAL PRACTITIONERS

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ABSTRACT

Stroke is the 2nd leading cause of death and 3rd leading cause of disability after cancer and ischemic heart disease. The recognition of acute stroke symptoms and knowledge about timely and prompt referral of a patient for possible thrombolysis is a need of time for which general practitioners (as they have to be the first responders many a times across Pakistan) need to be equipped with the advance knowledge about stroke treatment.

Methods:

In this cross-sectional observational study we assessed a total of 100 GPs practicing within a radius of 60km from a tertiary care teaching hospital in Islamabad where thrombolysis is being offered routinely to patients with acute ischemic stroke (AIS). They were interviewed using a standard questionnaire designed containing basic questions on stroke management.

Results:

Of the 100 GPs interviewed, 70% felt that tissue plasminogen activator (tPA) can be used in treating AIS but only 20% chose tPA as the best treatment option while 31% opted for other agents like citicholine along with antiplatelets plus tPA.Only 28% were aware that tPA should be given within 3 hours while 64% mentioned intra-arterial thrombolysis as a treatment option.Only 54% felt the need for good diabetic control and 25% wanted aggressive lowering of blood pressure. 43% chose normal saline as fluid of choice.

Conclusions:

Majority of the GPs are not aware about the beneficial effects of thrombolysis and are not updated regarding blood pressure and glucose control in the setting of acute ischemic stroke.

KEYWORDS:

Acute ischemic stroke, thrombolysis, general practitioners

Introduction:

Stroke is the 2nd leading cause of death and 3rd leading cause of disability after cancer and ischemic heart disease [1]. Stroke is defined as the sudden non-convulsive, focal neurologic deficit of vascular origin. It encompasses mainly two types: ischemic stroke and hemorrhagic stroke. The intensity and duration of symptoms render many stroke sufferers unable to function or to perform work activities. Stroke has long been recognized as a major cause of work absenteeism and impaired productivity. The national annual indirect burden of illness due to stroke in the United States is estimated to be $75.2 billion [2]. Despite causing significant disability many challenges remain as clinicians and investigators continue to design interventions to improve stroke mortality and disability for all.

The recognition of acute stroke symptoms and knowledge about timely and prompt referral of a patient for possible thrombolysis is a need of time for which general practitioners (as they have to be the first responders many a times across Pakistan) need to be equipped with the advance knowledge about acute ischemic stroke treatment. Intravenous tissue plasminogen activator (tPA) is the treatment of choice in the setting of acute stroke [3]. The limitations to intravenous thrombolysis in stroke patients in our settings include: (1) delayed arrival to hospitals due to lack of awareness about the signs and symptoms of stroke and also available therapeutic options among the population [4]; (2) lack of enough hospitals offering thrombolysis; (3) economic affordability; and (4) lack of awareness of thrombolytic therapy in stroke both among the patients and referring physicians, pre-hospital delays and lack of awareness about stroke thrombolysis among the medical professionals [5]. We studied the awareness about the treatment of stroke among general practitioners (GPs).

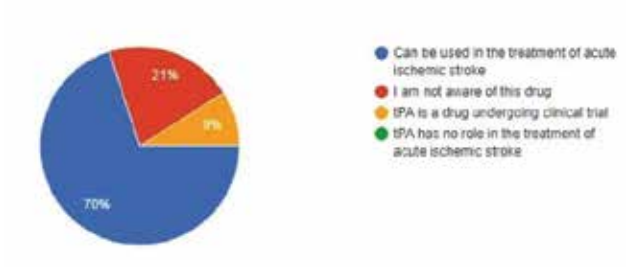
Materials and Methods:

This cross-sectional observational study was conducted within a radius of 60 km from a tertiary care teaching hospital in Islamabad (Pakistan) where thrombolysis (both intravenous and intra-arterial) is being offered routinely to patients with stroke. A total of 100 GPs were contacted through various electronic media like emails, text messages, phone calls, social applications while some were met at their clinics. They were interviewed after taking an informed consent using a standard questionnaire designed containing basic questions on the management of stroke. They were asked to fill the questionnaire. The data of the filled questionnaire by the GPs was compiled and analyzed using Microsoft Office Excel 2013.

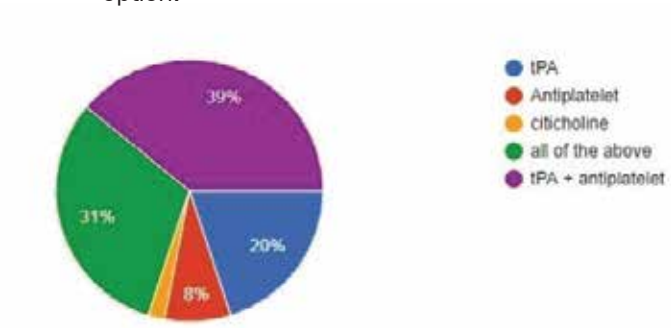
Results:

A total of 100 GPs completed the questionnaire and their responses were included as follows:

Q1: Opinion about tPA in the management of acute stroke: Of the 100 GPs, 70% agreed that tPA can be used in the treatment of acute stroke; 21% were not aware of this drug; 9%) believed that tPA is a drug undergoing clinical trial and no one felt that tPA has no role in the treatment of acute stroke.

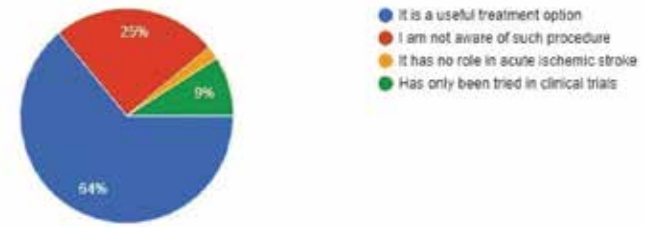


Q2: Effective therapies for a patient with acute stroke: only 20% felt tPA is an effective treatment option. 8% thought antiplatelet agent alone is effective. 2% believed that a neuroprotective agent like citicholine is effective and 31% considered tPA, antiplatelet and a neuroprotective agent together to be beneficial. 39% opted for a combination of tPA and antiplatelet to be a better treatment option.

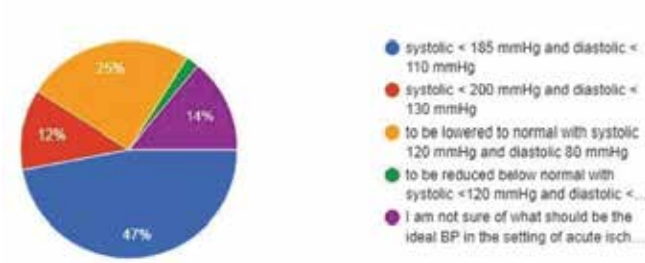


Q3: Window period for tPA: Only 28% GPs were aware that tPA needs to be given within 3 hours of onset of stroke; 15% did not know when to give this drug; 10% felt it can be given up to 12 hours; 22% felt it can be given within the first 6 hours and 25% felt it should be given within 4.5 hours.

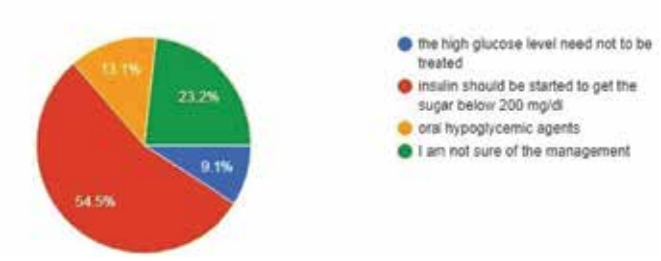
Q4: Regarding Intra-arterial thrombolytic therapy for acute stroke: 64% felt it was a useful treatment option; 25% were not aware of this procedure; 2% believed that it has no role, and 9% thought that it has only been tried in clinical trials.



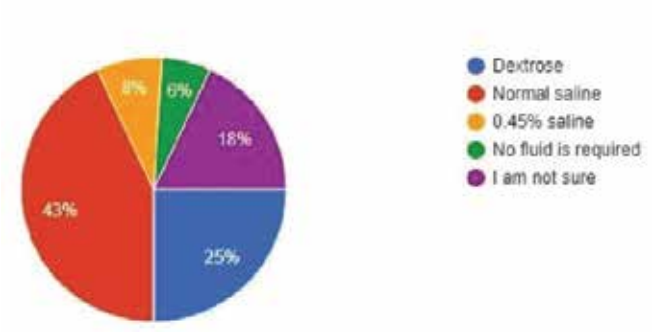
Q5: Blood pressure (BP) control in acute stroke: In a patient with acute stroke with high blood pressures: of the 100 GPs, 47% felt that the BP should be lowered - systolic < 185 mmHg and diastolic < 110 mmHg; 12% felt that the systolic < 200 mmHg and diastolic < 130 mmHg would suffice; 25% felt that the BP to be lowered to normal with systolic 120 mmHg and diastolic 80 mmHg; 2% wanted the BP to be reduced below normal with systolic <120 mmHg and diastolic <80 mmHg; and 14% were not sure of what should be the ideal BP in the setting of acute stroke



Q6: Regarding Blood sugar control in stroke: For a patient with acute ischemic stroke and a blood glucose of 289 mg/dL: Of the 100 GPs, 9.1% felt that the high glucose need not be treated; 54.5% felt that insulin should be started to get the blood glucose below 200 mg/dl; 13.1% opted for oral hypoglycemic agents to be effective; and 23.2% responders were not sure of the management of blood sugars in stroke.



Q7: Recommended intravenous fluids in acute ischemic stroke: If intravenous fluids are required for a patient with acute stroke, of the 100 GPs, 25% opted for dextrose, 43% opted for 0.9% normal saline to be effective, 8% thought 0.45% saline to be suitable, 6% believed that no intravenous fluid is required for acute ischemic stroke patients and 18% were not sure about the answer.



Discussion:

According to WHO statistics, 5.5 million deaths occurred due to stroke in 2002, estimating 20% of these deaths occurred in South Asia [6]. The American Heart & Stroke Association national guidelines recommend tPA to be given within 4.5 hours of symptom onset in a patient with acute ischemic stroke has morbidity benefit [7]. However, there is no published data on the use of thrombolysis in Africa. Although tPA has demonstrated efficacy in improving outcomes but its use is often complicated by complex inclusion and exclusion criteria, risk of haemorrhage, requirement for intense patient monitoring, substantial cost and the potential for protocol violations leading to devastating complications [8].

In our setting, quite often the first likely contact of stroke patients will be a local general practitioner. Therefore, it is cardinal that the local general practitioners are well aware of the various treatment options available for the stroke patients and also about the nearest center providing such treatment options for the timely and prompt referral. In our survey only 20% of the GPs opted for tPA as the best treatment option for a patient with acute ischemic stroke. Only 28% were aware that tPA needs to be given within the first 3 hours of symptom onset. Thus in this region of the country only one out of four potentially treatable cases of acute ischemic stroke will be referred promptly for possible thrombolytic therapy. In a German study, two-thirds of the GPs would immediately admit stroke-suspected patients [9]. A study in England has shown that visiting a GP can significantly delay patient arrival at the hospital [10].

There was a very inadequate knowledge seen regarding blood pressure control and management of blood

25% wanted an aggressive lowering of the BP which can be potentially detrimental to the patient [11]. High blood glucose can have disastrous effects on all types of acute brain injury. In this study, 54% of practicing general physicians felt the need to aggressively manage hyperglycemia and still, 25% chose dextrose to be the intravenous fluid of choice in patients with acute ischemic stroke. It is also strikingly noticeable that majority of the GPs chose aggressively marketed neuroprotective drugs like citicoline over tPA.

There are limitations in our study. This survey had sampled general practitioners only from a small geographic area of the city and hence the results cannot be generalized. However, the results of our study lead to the belief that there is a crucial need to rationalize and update the knowledge regarding the treatment of acute ischemic stroke in the midst of GPs in the country. Following this study, we are planning to organize a 24-hour acute stroke hotline. Any local practitioner in this region when coming in contact with a patient of acute ischemic stroke can immediately call and clarify instructions regarding timely and prompt referral for thrombolysis or clear any ambiguities regarding the conservative treatment of acute ischemic stroke.

Conclusion:

Still in the current era of information and technology, a majority of the GPs are still not aware of the beneficial effects of thrombolysis and are not updated regarding blood pressure and glucose control in the setting of stroke. The patients could reach the emergency department within the window period to be suitable for thrombolytic therapy. There is lack of awareness and knowledge about treatment options in acute ischemic stroke amongst the referring general practitioners so the future educational campaigns and programs that will be organized should focus on the importance of stroke knowledge among general practitioners.

References:

1. Johnson W, Onuma O, Owolabi M, Sachdev S. Stroke: a global response is needed. Bulletin of the World Health Organization. 2016 Sep 1.

2. Gooch CL, Pracht E, Borenstein AR. The burden of neurological disease in the United States: A summary report and call to action. Ann Neurol. 2017;81(4):479-84.

3. Chapman SN, Mehndiratta P, Johansen MC, McMurry TL, Johnston KC, Southerland AM. Current perspectives on the use of intravenous recombinant tissue plasminogen activator (tPA) for treatment of acute ischemic stroke. Vasc Health Risk Manag. 2014;10:75

4. Iqbal A, Haider SA, Kazmi SA. Limitations to Intravenous Thrombolytic Therapy in Acute Ischemic Stroke in Our Settings. PJMHS. 2016;10(3):1047-49.

5. Abraham SV, Krishnan SV, Thaha F, Balakrishnan JM, Thomas T, Palatty BU. Factors delaying management of acute stroke: An Indian scenario. Int J Crit Illn Inj Sci. 2017;7(4):224.

6. World Health Organization (WHO). The Atlas of Heart Disease and Stroke 2009. (http://www.who.int/cardiovascular_diseases/resources/ atlas/en/)

7. Schellinger PD, Köhrmann M. 4.5-hour time window for intravenous thrombolysis with recombinant tissue-type plasminogen activator is established firmly. Stroke. 2014;45(3):912-3

8. Weant KA, Baker SN. New windows, same old house: an update on acute stroke management. Adv Emerg Nurs J. 2012;34(2):112-21.

9. Roebers S, Wagner M, Ritter MA, Dornbach F, Wahle K, Heuschmann PU. Attitudes and current practice of primary care physicians in acute stroke management. Stroke. 2007;38(4):1298-303.

10. Harraf F, Sharma AK, Brown MM, Lees KR, Vass RI, Kalra L. A multicentre observational study of presentation and early assessment of acute stroke. BMJ. 2002;325(7354):17.

11. Lattanzi S, Bowry R, Silvestrini M, Navalkele D, Gonzales N. Blood pressure management in stroke: Five new things Authors Respond. Neurol: Clinical Practice. 2015;5(2):92.

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Waleed Shahzad; concept, data collection, data analysis, manuscript writing, manuscript review
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Haris Majid Rajput; data collection, data analysis, manuscript writing, manuscript review
Mazhar Badshah; data collection, data analysis, manuscript writing, manuscript review