

## Knowledge of Community Physicians Regarding Ischemic Stroke: Interesting Results

Shazia Jatoi<sup>1</sup>, Syeda Urooj Riaz<sup>2</sup>, Shariq Mukarram<sup>3</sup>,  
Aijaz Ali<sup>4</sup>, Ajeet Kumar<sup>5</sup>, Muhammad Ishaq Ghauri<sup>5</sup>

### Abstract

The aim of study is to assess the knowledge of community doctors regarding stroke and its prevention. A cross-sectional study at Department of Medicine, Jinnah Medical and Dental College, from February 2018 to August 2018. A total of 263 questionnaires were distributed among medical practitioners along with a proforma regarding physician's information and consent to participate. In this survey 201 participants filled the questionnaire, showing a reasonable response rate of 76.42 percent. Their mean time duration of practice was  $13 \pm 8$  years. Almost 95% of the practitioners were aware of risk factors but a great majority had a misconception regarding high density lipoprotein(HDL), noise pollution and driving. All 201 participants agreed on brain imaging but modality of choice was variable. Their knowledge regarding treatment and unusual presentation of stroke was not adequate and only 79% believed the need for referral to a neurologist. This survey revealed a wide gap in the knowledge of practitioners regarding diagnosis and current guidelines of management.

**Keywords:** Stroke, HDL, Brain imaging.

**Citation:** Jatoi S, Riaz SU, Mukarram S, Ali A, Kumar A, Ghauri MI. Knowledge of Community Physicians Regarding Ischemic Stroke: Interesting Results [Online]. *Annals ASH KM&DC* 2019;24.

(ASH & KMDC 24(2):176;2019)

### Introduction

Stroke is a significant cause of morbidity and mortality in the western world and in the past two decades the incidence of ischemic stroke has significantly changed in different regions of the world. A literature review shows a statistically significant decrease 42% in incidence of in high income countries and a greater than 100% increase in low to middle income countries<sup>1</sup>. As studies have shown that in Pakistan stroke sufferers are almost a decade younger than their counterparts in the western region<sup>2</sup>, so the disability of stroke survivors adds a lot to the economic burden of our resource poor country<sup>2</sup>. This fact shows the need for an increased awareness among the public and the

health care providers of Pakistan and other affected regions of the world.

The national health survey of Pakistan showed a very high prevalence of modifiable risk factors e.g. Hypertension in 33%, Diabetes mellitus in 35%, Tobacco use in 33% and obesity in 28%<sup>3</sup> which represents a very high burden of exposure of Pakistani population to TIAs and stroke. A study conducted in Pakistan regarding the knowledge of physicians about TIAs revealed that the knowledge regarding use of aspirin and neuro imaging was just satisfactory but the use of EKG was not appreciated by majority. Similarly, many patients were given futile expensive medications by general practitioners<sup>4</sup> which could be a cause of non-compliance to the medication due to unnecessary burden. This review emphasizes the importance of further research regarding ischemic stroke prevention in the Pakistani population and specially regarding knowledge of public and health care providers about this particular illness.

<sup>1-5</sup>Department of Medicine,  
Jinnah Medical & Dental college

**Correspondence:** Dr. Syeda Urooj Riaz  
Department of Medicine,  
Jinnah Medical and Dental College  
Email: urooj\_sr@hotmail.com  
Date of Submission: 10<sup>th</sup> December 2018  
Date of Acceptance: 31<sup>st</sup> October 2019

## Methods and Results

This cross-sectional study surveyed currently licensed medical practitioners working in community-based clinics and emergency rooms. A questionnaire with "Select the best" questions was delivered to these practitioners along with informed consent proforma carrying some relevant details of the participants. A pilot survey was initially conducted on 10 practitioners in the community before implementation of the factual survey to estimate the correct understanding and acceptability of potential participants. The questionnaire and Study was approved by Medical Ethics Committee. The questionnaire & survey was a self-administered standardized questionnaire in English. The questionnaire consisted of 17 questions relevant to the awareness of participants regarding risk factors, clinical presentation, diagnostic tools and initial as well as secondary management. The questions were based on the guidelines provided by NIHSS. The first question was regarding common risk factors of ischemic stroke. The rest of the questions evaluate the participant's knowledge regarding most appropriate diagnostic tools, immediate management and secondary preventive measures along with their perception about role of rehabilitation and referral. The questionnaire was delivered to participants directly along with proforma. Analysis was done using SPSS 20. For most of the questions frequency and percentages were calculated.

A total of 263 questionnaires were distributed among the physicians of seven randomly selected regions of Karachi at the community-based clinics and hospitals from 1st February to 31st August 2018. Among these, 201 participants showed a response rate of almost 76.4%. It included 118 male practitioners and 83 female doctors. Their mean time duration for practice was  $13 \pm 8$  years. The highest academic qualification was diploma in different fields of medicine while minimum qualification was MBBS. Among the participants 148 out of 201 (73%) had treated more than 50 stroke patients in their clinical practice while 49 (24%) had treated 20 to 50 stroke victims. Regarding their concept about the need for referral, 43 out of 201 (21.3%) referred most of the cases while 158/201 (78.6%) treated most of the cases by themselves and referred only a few patients. Only 159 participants (79%) referred

stroke patients to neuro-physicians and the remaining participants (21%) referred the patients to General Physicians or neurosurgeons.

First question of the questionnaire records knowledge of common risk factors. Almost 95% of the participants were aware of the common risk factors but 45% considered high HDL as a risk factor for stroke. Almost 90% of the doctors were aware of the fact that limited physical activity and atrial fibrillation are significant risk factors for stroke onset but 17% and 24% had a misconception that noise pollution and driving in a thickly populated city respectively can be risk factors for the ischemic strokes.

Among the questions regarding diagnostic tools, all of the participants agreed that brain imaging is mandatory in suspected stroke patients. Thirty-seven percent considered that CT scan of the brain is the investigation of choice while 22% considered MRI Brain plain with DW images as a preferred investigation. Almost 20% considered that MRI Brain plain while 10% considered that CT Brain with contrast or MRI Brain with contrast is needed to diagnose stroke as an immediate investigation.

A significant percentage of 86% were aware that ECG evaluation should be carried out in stroke patients. An interesting fact was noted that physicians with a shorter practice duration were more aware of the importance of ECG and MRI brain with DW images.

Only 53.7% were aware of the recommendation regarding the time window of 4.5 hours for IV fibrinolytic therapy with rtPA, while 30% chose the incorrect answer and 16% admitted that they were not aware.

Only 24.35% were aware of the recommendations for initiation of anti-hypertensive therapy in stroke patients. Among the participants only 33.8% were aware of the correct use of oral anticoagulation therapy in cardioembolic stroke, while 55% chose antiplatelet medication and 11% admitted that they had no knowledge in this regard. Seventy-four percent were aware of the correct target INR.

Eighty-four percent were prescribing antiplatelet therapy in non-cardio-embolic stroke while 15% told that they choose to prefer to use

oral anticoagulants. Only 28% were aware of the use of single antiplatelet drug for secondary prevention of stroke while 72% believed that lifelong double antiplatelet therapy is recommended.

Regarding stroke in postmenopausal patients, 69% considered that HRT is a recommended part of further treatment while 30.35% knew the correct guidelines. All of the participants claimed that they recommend rehabilitation and occupational therapy in all the stroke affected patients.

Seventy-four percent believed that a complete recovery is not possible in stroke survivors even with best possible efforts while 26% believed that full recovery is possible with best rehabilitation measures and proper compliance with medications.

Eight-eight percent believe that some degree of limb weakness or slurring of speech is a mandatory presentation in stroke and only memory disturbance or balance issues are not the stroke presentation.

Regarding referral attitudes, 79% practitioners believe that only few cases need further referral and majority can be managed in clinics while 21% believe that referral is needed. Seventy-nine percent of the physicians refer the cases to neurophysicians while 20% refer to general physicians.

## Discussion

From our questionnaire-based survey, we inferred that a significant number of practitioners were aware of the common risk factors and need for rehabilitation however few of them considered noise pollution, driving in a thickly populated area and daily egg intake may be a cause of ischemic strokes.

Although these are not the recognized risk factors for stroke but can be an indirect cause of raised blood pressure and thus cerebrovascular accidents. A study showed an association of long term exposure to particulate matter (PM) with transient increase in blood pressure (BP) in a population based sample<sup>5</sup>. This supports the hypothesis that long term exposure to PM may promote atherosclerosis. Although majority of our practitioners recommend ECG evaluation but still a substantial number still underestimates the importance of ECG evaluation. A study showed a significant difference

in the rate of recurrence of TIAs and strokes, when ECG and echocardiographic evaluation was conducted and management was planned accordingly<sup>6</sup>.

A disappointing finding of our study was that majority of the practitioners were not aware of the proper protocol and guidelines for the use of rtPA and oral anticoagulants in stroke patients with atrial fibrillation. A significantly comparable data regarding use of rtPA was found in the general practitioners working in India in a study carried out in 2010<sup>7</sup>.

In our questionnaire-based survey, 72% of the practitioners were in favor of the use of aspirin along with clopidogrel which is in accordance to the guidelines. These guidelines endorse the use of aspirin alone or in combination with another antiplatelet agent to reduce the risk of recurrence of ischemic strokes<sup>8,9</sup>.

In response to the question of complete recovery in stroke survivors, majority of our surveyed practitioners believed that full recovery is not possible. It is of utmost importance for the practitioners to identify the problems which can be fully or partially healed. In a study regarding symptomatic and palliative care of stroke survivors, it was a very encouraging result that multiple problems e.g. pain, spasticity, fatigue, seizures, depression limb weakness, speech and memory could be significantly or in some cases fully manage<sup>10</sup>.

In Pakistan a study was conducted regarding the treatment trends of community physicians in TIA which revealed that multiple futile treatment maneuvers are being practiced which cause an unnecessary cost burden over the patients and caretakers<sup>11</sup>. A similar study conducted in china in 2015 revealed a huge gap in the knowledge of current guidelines for secondary prevention of stroke among community physicians<sup>11</sup>.

Moreover, one striking answer provided by our surveyed participants was that majority of them do not feel that the patient should be referred to a neurophysician and despite their limited knowledge in this regard they continue the treatment by themselves.

Most encouraging finding was that all the practitioners were aware of the importance of physiotherapy and occupational therapy. Our study's

limitation was of small size but revealed that there is a large gap in the knowledge of our practitioners regarding this widely prevalent problem of stroke.

### Conclusion

Our study's limitation was a small size of the surveyed practitioners. However, this study revealed that there is a large gap in the knowledge of our practitioners regarding this widely prevalent problem of Stroke.

In our resource poor country, majority of our poor population can't approach the neuro-physicians timely, so we need a wide scale campaign to educate our general practitioners regarding modern trends and guidelines of treatment. This small-scale study is useful in making a road map to the future scientific sessions among our practitioners to ease out the stroke affected population.

### Conflict of Interest

The authors of the study do not have any conflict of interest with findings of authors of previous studies.

### References

1. Feigin VL et al. Worldwide stroke incidence and early case fatality reported in 56 population-based studies: a systematic review. *Lancet Neurol*. 2009;8:355-69. [DOI: 10.1016/S1474-4422(09)70025-0]
2. Ayesha Kamran Kamal, Ahmed Itrat. The Burden of Stroke and TIA in Pakistan: a community-based Prevalence study. *BMC Neurology* 2009;9:58. [DOI: 10.1186/1471-2377-9-58]
3. Jafar TH, Chaturvedi N, Pappas G. Prevalence of overweight and obesity and their association with Hypertension and Diabetes Mellitus in an Indo - Asia population. *CMAJ* 2006;175: 1071-77. [DOI: 10.1503/cmaj.060464]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1609152/>. Accessed on 26th September 2019.
4. Kamal AK, Sheikh Q, Siddiqui S. Knowledge of physicians regarding transient ischemic attacks in a resource poor country Pakistan. *Austin J Cerebrovasc Dis & Stroke* 2015;2:1031. Available from: <http://austinpublishinggroup.com/cerebrovascular-disease-stroke/download.php?file=fulltext/ajcds-v2-id1031.pdf>. Accessed on 26th September 2019.
5. RD Brook, S Rajagopalan, CA Pope. Particulate matter air pollution and cardiovascular disease: an update to the scientific statement from the American Heart Association. *Circulation*. 2010;121, 2331-78. [DOI: 10.1161/CIR.0b013e3181d8e3e1]. Available from: [https://www.ahajournals.org/doi/full/10.1161/CIR.0b013e3181d8e3e1?url\\_ver=Z39.88-2003&rft\\_id=ori%3Arid%3Acrossref.org&rft\\_dat=crpub%3Dpubmed](https://www.ahajournals.org/doi/full/10.1161/CIR.0b013e3181d8e3e1?url_ver=Z39.88-2003&rft_id=ori%3Arid%3Acrossref.org&rft_dat=crpub%3Dpubmed). Accessed on 26th September 2019.
6. Koz C, Uzun M, Yokusoglu M et al. Echocardiographic and clinical correlates of recurrent TIAs: a follow up study. *South med J* 2008;101:246-251. [DOI: 10.1097/SMJ.0b013e3181647071.]
7. Aaron S, Alexander M, Maya T, Methew V. Treatment of acute ischemic stroke awareness among general practitioners. *Neuroindia*. 2010; 58: 441-2. [DOI: 10.4103/0028-3886.65592]. Available from: [https://www.researchgate.net/publication/45275431\\_Treatment\\_of\\_acute\\_ischemic\\_stroke\\_Awareness\\_among\\_general\\_practitioners](https://www.researchgate.net/publication/45275431_Treatment_of_acute_ischemic_stroke_Awareness_among_general_practitioners). Accessed on 26th September 2019.
8. Dengler RDH, Schwartz A, Grond M, Schumacher H et al. Early treatment with aspirin plus extended release dipyridamole for transient ischemic attacks or ischemic stroke within 24 hours of symptoms onset (Early Trial ): a randomized open label, blinded end point trial. *Lancet Neurology* 2010;9: 159-166. [DOI: 10.1016/S1474-4422(09)70361-8]
9. Acelajado MC, Oparil S. Antiplatelet therapy for treatment of transient ischemic attacks. *J Chin Hypertens (Greenwich)* 2012;14:103-111. [DOI: 10.1161/STROKEAHA.118.023954]. Available from: <https://www.ahajournals.org/doi/pdf/10.1161/STROKEAHA.118.023954>. Accessed on 26th September 2019.
10. Claire J. Cruetzfeldt MD, Robert G. Holloway MD, MPH and Melanie Walker MD. Symptomatic and Palliative care for stroke survivors *J Gen Internal Medicine* 2014. [DOI: 10.1007/s11606-011-1966-4]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC22258916/>. Accessed on 26th September 2019.
11. Chen Chen, Xiaoyuan Qiao, Huijie Kang, Lixia Bai. Community physician's knowledge of secondary prevention after ischemic stroke: a questionnaire survey in Synxi province china. *BMC Med Educ* 2015;15:1-9. [DOI: 10.1186/s12909-015-0481-4]. Available from: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4632687/pdf/12909\\_2015\\_Article\\_481.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4632687/pdf/12909_2015_Article_481.pdf). Accessed on 26th September 2019.