Knowledge and perceptions of physicians about Evidence Based Management of hypertension in acute ischemic stroke patients

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ABSTRACT

Objective

We explored knowledge and perceptions of physicians regarding management of hypertension in acute ischemic stroke patients and use of various anti-hypertensive medicines as primary and secondary prevention of stroke.

Subjects and Methods

A survey was designed with 7 statements derived from the recommendations from American Heart Association (AHA)/American Stroke Association stroke council guidelines 2006 and the 7th report of the Joint National Committee (JNC VII 2003).

Eighty surveys were distributed to the physicians at Shifa College and Shifa International Hospital, and Pakistan Institute of Medical Sciences, Islamabad.

Results

Fifty surveys were returned and the act of responding was taken as consent for participation. Mean duration from graduation (MBBS) was 10.3±9.9 years. When asked about the management of a BP of 170/90 mm Hg in a patient with acute stroke during first 3 and 24 hours, 58.6% and 60% recommended that patient be treated for this blood pressure on these intervals. When asked about the most effective primary prevention for ischemic stroke in a hypertensive patient, 69.7% thought that lowering blood pressure is
the single most important factor and 21.2% thought aspirin as the sole first line primary prevention. 22.5% recommended angiotensin converting enzyme inhibitors and or angiotensin receptor blockers as the primary anti-hypertensive therapy for secondary prevention of a hypertensive ischemic stroke. 50% thought that females do not have higher importance as compared with guidelines.

**Conclusion**

There is a considerable gap between evidence based recommendations and actual perceptions of physicians in managing hypertension in stroke patients. This would require an urgent attention to emphasize evidence based practice. (Rawal Med J 2010;35: ).

**Key Words**

Hypertension, ischemic stroke, Evidence based practice.

**INTRODUCTION**

Stroke remains a major health problem worldwide.\(^1\) It has been shown that stroke is perceived as being worse than death by more than half of people who were at risk of having stroke.\(^2\) From 1968 to 1996 there was 60% decline in stroke mortality in United States and subsequently reached plateau.\(^3\) In past 10 years incidence of stroke is increasing with hypertension being a major modifiable risk factor.\(^4\) Epidemiological data on stroke burden pattern in Pakistan is limited. All the risk factors for stroke like hypertension, diabetes, coronary artery disease, dyslipidemia, and smoking are highly prevalent in Pakistan.\(^5\) A National health survey revealed that more than 30% population above 45 years is suffering from hypertension, 12% population above 15 years is suffering from dyslipidemia and there are 5 million diabetic patients in Pakistan.\(^6\)
Hypertension is common immediately after acute ischemic stroke mainly due to altered brain auto regulation. In Pakistan, evidence based paradigm is still in its infancy\(^7\) and most of the hospitals do not have stroke protocols or clinical care pathways for acute stroke management. Moreover, the choice of antihypertensive therapy for both primary and secondary prevention of stroke may lack the necessary evidence base. In this study, we explored the perceptions of physicians for immediate management of hypertension and their choice of anti hypertensive drugs in patients with acute ischemic stroke admitted in the hospital.

**METHODS**

We conducted this study in two teaching hospitals i.e. Shifa International hospital (SIH) which is a 400 bedded tertiary care center affiliated with Shifa College of Medicine (SCM) and Pakistan Institute of Medical Sciences (PIMS), Islamabad. The study was approved by Shifa International Hospital’s ethics committee. We designed a survey containing seven statements derived from evidence-based recommendations of AHA/American Stroke Association & stroke council guidelines published in 2006 and 7\(^{th}\) report of JNC VII for hypertension published in 2003. Survey contained both open ended questions and multiple choice questions. After piloting the survey in 10 post graduate trainees, the statements were modified for clarity.

We distributed 80 surveys to the physicians including consultants and postgraduate students working in various specialties of medicine and neurosurgery in both SCM and PIMS. The survey forms were distributed by medical students and physicians were requested to fill out the forms on the spot. Those who did not fill the forms on the spot
were excluded from the analysis. This was to ensure that physicians fill out the form with their existing knowledge on the subject.

RESULTS

Out of 80 surveys 50 forms were filled on the spot. The response rate was 63%. The act of responding to questionnaire was taken as consent for participation in the survey.

Respondents included 30 participants from medicine & allied specialties, 6 from neurosurgery and rest from other departments. Fifteen participants had completed one or more post graduate qualifications. Mean duration of graduation (MBBS) of participants was 10.3±9.9 years.

Fig 1. Grading of risk factors for stroke in order of significance.
According to the survey, 58.6% of participants would treat BP of 180/100 mm of Hg vigorously in an ischemic stroke patient during first three hours of presentation in emergency room. When asked whether they would treat BP of 180/100 mm of Hg in similar patients during next 24 hours, 60% responded in favor of treating hypertension and only 22% wanted to observe while 18% participants did not answer the questions. When asked about controlling BP as a primary prevention of stroke in patients with chronic hypertension, 70% of participants agreed that lowering BP is the single most important factor for primary prevention for stroke in such patients while 21% thought that anti-platelet therapy rather than control of BP as the most important primary prevention strategy for ischemic stroke.

When asked about strategies for secondary prevention of ischemic stroke, only 23% recommended using angiotensin converting enzymes inhibitors and/or angiotensin receptor blockers as first line antihypertensive therapy for secondary prevention of ischemic stroke, 41% of participants did not even mention use of any antihypertensive therapy for secondary prevention. Contrary to the evidence, 50% of participants thought that the females do not have high stroke mortality when compared with males.

79% rated hypertension as number one risk factor for stroke (Fig 1). 66.7% of respondents admitted that they did not review any clinical practice guidelines for any disease for at least more than 6 months.

**DISCUSSION**

Our survey revealed the misconceptions about stroke management and lack of evidence based practice. Aggressive control of BP in first 24 hours after stroke is still considered
important by significant number of physicians. A significant number, however, still lacks the awareness about hypertension as the most important factor for primary and secondary prevention of ischemic stroke. Similarly, most of the physicians still do not have the knowledge about the use of angiotensin converting enzyme inhibitors or angiotensin receptors blockers as the preferred secondary prophylaxis for control of hypertension in patients with a recent ischemic stroke.

Another misconception was high mortality in male patients with ischemic stroke. This may reflect gender bias towards healthcare access where males are more frequently taken to tertiary care hospitals due to societal biases. An alarming fact revealed in the survey pertains to the lack of up-to-date knowledge of most of physicians. Lack of time, resources, opportunities for continuous medical education and limited ability to self-assess and self-audit of practices may contribute to this situation.

A considerable proportion of patients failed to achieve the guidelines recommended BP targets and this apparent treatment gap was more pronounced amongst female patients. Recently, American stroke association /AHA released new evidence based guidelines for secondary stroke prevention in patients with ischemic stroke and transient ischemic attacks. Evidence based recommendations are set forth for the management of risk factors including hypertension and clinical implementation patterns for primary care physicians. Health care delivery is shifting towards ambulatory services focused around primary care. In a country like Pakistan, it is even more important to create awareness of evidence based management strategies as the resources are limited and use of non-
evidence based therapies will only increase morbidity, mortality, cost and health care burden to the already choked delivery system.

It is imperative for regulatory bodies to revise curricula at both under and post graduate levels to foster critical thinking, life long learning skills and promote the ability to self-assess. Such an approach will produce doctors who have the ability to reflect on their practice, keep themselves up-to-date and will be skilled in acquiring valid information for patient care independent of pharmaceutical industry sponsored activities. While waiting such a change, emergent steps need to be taken by regulatory bodies like HEC/PMDC and individual institutions to implement evidence based paradigm in both undergraduate and postgraduate medical education. This may include implementing clinical care pathways, regular audit of patient care and developing outcome based quality assurance processes. We also suggest that institutions should have quality monitoring mechanisms and ways where physician promotions are linked with documented continuous professional development activities.

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