EDITORIAL

Quality Metrics in Acute Stroke: Time to Own

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Stroke is now one of the leading causes of death and disability worldwide. According to the World Health Organization, stroke accounts for nearly 6 million deaths annually, and to add on over and above, the long-term disabilities experienced by the survivors.[1] A higher incidence, prevalence, and disability is reported from the low-income and middle-income countries as compared to the high-income countries, and it also reflects in the high mortality figures. Studies from India have reported a prevalence rate estimated between 45 and 487/100,000 and an incidence rate between 33 and 123/100,000 for the urban population, the rural numbers not being very different.[2] The direct and indirect impact of stroke, ranging from acute medical care to long-term rehabilitation and loss of productivity, impose a significant economic burden on healthcare systems.[3]

Quality indicators are measured units for determining the level of adherence to standards in health-care and the level of achieved result.[4] These ensure a degree of reliable and standardized care to the patients with an aim to improve the outcome, and its importance and graveness were realized more than 2 decades ago. Although started initially for diseases with high morbidity and mortality such as diabetes mellitus, hypertension, and cancer, the need for its use has extended to other diseases such as stroke, quality indices can provide transparent quality-performance information resulting in accountability and improvements.[5]

To standardize stroke care, guidelines have been introduced by expert panels and regulatory bodies, for its prevention, management, and control. These comprise of acute care quality metrics, which are based on early management of stroke guidelines of the American Heart Association (AHA)/American Stroke Association (ASA), published in 2018 and re-emphasized in 2021.[6,7] It includes management by a stroke unit within 10 min, door-to-computerized tomography (CT) scan time in less than 25 minutes, and door-to-needle time in less than 45 minutes for intervention. Deep vein thrombosis prophylaxis, dysphagia screening, antithrombotic therapy, anticoagulation for atrial fibrillation, antihypertensive therapy, antidiabetic medication, smoking cessation, low salt intake, statin therapy, patient and family education are important for secondary prevention,[7] while rehabilitation metrics and mortality rates can help in improving long-term prognosis with stroke.

Based on recent studies, four pillars of the stroke quadrangle have also been suggested. It highlights the importance of surveillance, apart from the previously described prevention, acute care, and rehabilitation.[8]

Despite the availability of guidelines for management along with the national prevention and control program, the challenges are too many. Infrastructural weakness, lack of stroke hospitals and intensive care units (ICUs), lack of awareness and implementation, restricted access to prehospital care, and non-availability of poststroke rehabilitation services can hinder the timely and effective management of stroke.[9]

The number of people getting stroke has doubled in the last three decades and more younger individuals (<55 years), are getting affected by stroke worldwide.[10] The adherence to quality metrics of stroke has huge variations both within and country and beyond. A recent study reported that India and China, which account for one-third of the world population, have different risk factors and age distribution for stroke. Indian patients had greater stroke severity, higher rates of thrombolysis within 3 hours, greater in-hospital mortality, and worse outcomes than patients in China.[11] In European countries like Italy, poststroke rehabilitation of patients was found to be a major limitation to stroke care.[12] Prompt patient transportation, acute reperfusion therapies, and stroke unit hospitalization were found more widely accessible in Greece, and these parameters helped in improving the functional outcomes of stroke patients.[13] In the USA, the implementation of quality metrics based on 11–100 parameters decreased hospital mortality leading to better outcomes.[14] What is evident from the literature is that several methodological difficulties, make the interpretation of data from various sources, quite challenging.

Panda BK et al. performed a single center prospective study in stroke patients with 12 quality performance measures, which included 5 acute and 7 discharge criteria to study the correlation of quality metrics in acute stroke care with clinical outcomes, and the adherence to quality metrics here, was assessed earnestly by all or none principle.[15]

This study strived to achieve a door-to-needle time of 55 minutes which was comparable to other studies.[16] Remarkably, 92.8% of patients received intravenous recombinant tissue plasminogen activator (IV-rTPA) within the prescribed 4.5 hours. The adherence to the National Institutes of Health Stroke Scale (NIHSS) score documentation was 100% and the functional outcome assessed at 28-days postdischarge was significantly improved. It also highlights that a focused multiple quality indices-based

approach is highly possible and does promise good results and quality care.

This study was conducted in an urban center in India, where the best facilities were available, and the results were encouraging but the findings cannot be generalized all across, and it could be a limiting factor. The 28-days-postdischarge neurofunctional outcome assessment done here might not fully capture, the long-term effects.

It is important that one should be aware of the drawbacks of these quality indices. The quality metrics often focus on specific aspects of stroke care that are relevant, but such an approach can have a narrowed focus, potentially overlooking other aspects of care that are equally vital, and it can be at the expense of overall quality. It could also lead to disparity in allocation of resources and some areas might receive less attention. Excessive focus on metrics can also pressurize the healthcare personnel to meet the specific targets. These quality metrics tend to focus on short-term outcomes such as 30-day mortality and they may not be able to assess the long-term impact of stroke on patients' lives and their functional status. Also, the quality metrics should be aligned with changing guidelines and best practices, which could be challenging.[17]

It is therefore essential that these metrics are used carefully and judiciously with a comprehensive approach that includes monitoring, evaluation, and clinical judgment.

Although significant strides in improving stroke care are being seen which emphasize the importance of quality metrics, however, ensuring high-quality care all across could be quite challenging, but that is what is required.

Given the significant morbidity, mortality, and societal impact associated with stroke, quality metrics are not mere numbers but represent a critical tool in the ongoing effort to reduce the burden of stroke and improve the lives of those affected. The application of indices for stroke patients is essential to evaluate and ensure the best care for individuals suffering from or at risk for stroke.

The various upcoming studies will also help us understand better the current practices across the country, the level of quality care being given, along with the variations and their extent, thereby giving better clarity on the various facilitators and barriers, which can be used as tools for further improvement.

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