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Research Article

Saudi Arabia's Stroke (Brain) Statistics: An Assessment of the Most Recent Research

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Abstract: Stroke is a leading cause of death and disability among people worldwide. It is a cerebrovascular illness. Stroke is the third leading cause of mortality in developed nations, after heart disease and cancer. Stroke is the second leading cause of mortality globally and a significant source of morbidity because to the severe mental and physical disability many survivors are left with. Moreover 28 million people call KSA home. It occupies about four-fifths of the Arabian Peninsula. The incidence of stroke is rising quickly and is now one of the leading causes of mortality in Saudi Arabia. Stroke is more common in developing nations than in developed ones, yet there hasn't been nearly enough study done on its incidence, prevalence, and associated socio-demographic features. The goal of this study is to explore several aspects of stroke in Saudi Arabia based on existing research.
Keywords: Saudi, KSA, Stroke, cerebrovascular illness, mortality.

Introduction

Stroke is third among all causes of mortality, and its aftereffects are devastating for those who survive. Stroke is the second leading cause of mortality worldwide, behind heart disease. Stroke in the elderly has been researched extensively, but research on the prevalence of risk factors and causes of stroke in the young is still in its infancy. The age at which one is considered a young adult is also a matter of some debate. Juvenile stroke has been characterised in different ways by different research. Stroke in children and adolescents is sometimes referred to as paediatric stroke, however this population is also understudied[1]. Ischemic strokes are more common in people of this age. Stroke in young people is more economically disastrous than in the elderly since it strikes during peak earning years. The incidence of ischemic stroke has increased in younger age groups during the 1980s, according to various studies, whereas it has decreased in older age groups[2].

A CVA is characterised by a sudden decline in brain function due to an interruption in blood flow to the brain. Stroke, caused by ischemia, obstruction (thrombosis, arterial embolism), or haemorrhage, has emerged as a major worldwide killer and a prominent cause of substantial, long-term cognitive impairment and functional disability. However, there are currently no medication treatments that have been shown to aid recovery after a stroke. Physical, mental, social, and cognitive abilities may be permanently impaired after a stroke, depending on the degree and kind of the event[3]. WHO estimates that around 15 million individuals throughout the globe have a stroke each year. Five million of them will die, and another five million will be crippled for life. Strokes affect people of all economic levels, although four out of 5 strokes occur in poor and middle-income nations. However, if nothing is done, the annual death toll from stroke is expected to rise to 6.7 million by 2015. It is also significant to highlight that although the Western stroke rate is decreasing, the Asian stroke rate is likely to be rising. As the rates of communicable illnesses decline, the rates of non-communicable diseases rise, creating a "double burden of disease" in the Middle East area, according to studies. Stroke is rapidly becoming a serious public health issue in this area, with its associated death rate expected to almost treble by the year 2030[4]. However, a large proportion of patients in GCC nations reportedly were unfamiliar with the word "stroke" before the research. People in the greatest risk categories for stroke also had the least amount of stroke knowledge. In many ways, the populations of the Arab world mirror those of the West and East in terms of the ways in which lifestyle and food may affect

stroke risk, type, and post-stroke survival. KSA has a population of over 28 million and an area of over 2,150,000 km^2 [5], making it the largest nation on the Arabian Peninsula. In recent years, stroke has emerged as a major health issue and killer in Saudi Arabia. This makes it a crucial social and economic medical concern for the Kingdom. Stroke is more common in developing nations than in industrialised ones, and there is a clear need for further study on the disease's incidence, prevalence, and sociodemographic characteristics; nevertheless, there is a paucity of such studies. In this summary, we draw on the available literature to examine the many different facets of stroke in Saudi Arabia.

Methods

With the help of an experienced researcher, we searched the relevant literature. The databases of the National Library of Medicine, such as Ovid Medline, were combed through. Professional and expert recommendations and stroke workshops that had not been peer reviewed were also accessed through general search engines. Only the English or Arabic languages were considered in the search. "Articles were chosen after being reviewed for relevance based on their titles and abstracts, with additional references found in the articles' reference lists."

The Present State of Understanding

Stroke in terms of incidence, prevalence, and subtype

Stroke has an enormous and growing worldwide burden, especially in low- and middle-income countries due to its increasing incidence, mortality, DALYs, and economic effect. It is possible that the preponderance of younger age groups in this area accounts for the lower stroke incidence and prevalence in Saudi Arabia compared to that observed in Western nation. No recent, comprehensive studies of the prevalence and incidence of strokes in Saudi Arabia have been done. While the exact number of new cases of stroke in Saudi Arabia is unknown, one research conducted in the last decade found a crude incidence rate of 29.8 per 100,000 people per year[6]. "Ischemic strokes were the most common kind of stroke recorded (69%), whereas SAH occurred in just 1.4% of case. Crude annual incidence rate was estimated at 43.8 per 100,000 at a hospital that treated only members of the Saudi Arabian National Guard." Ischemic infarcts (79%) were reported to be the most common form of stroke subtype, with 46.0% being lacunar infarcts. "This was followed by intracerebral haemorrhage (18.8%) and SAH (2.2%). Ischemic strokes accounted for 76% of instances, as reported by Awada et al., with 1/3 of them being lacunar infarcts". Only 2% of strokes were SAHs, with ICHs being the most common kind of hemorrhagic stroke. Ischemic stroke was shown to be more common than other kinds of stroke in many investigations[7].

Studied 200 Saudi stroke patients and concluded that 87% of strokes were caused by cerebral infarction, 4.5% by subarachnoid haemorrhage, 6.5% by cerebral haemorrhage, and 2% by venous infarction. The middle cerebral artery was the most often affected vascular, accounting for 52% of arterial infarcts[8]. Twenty-one percent of patients with arterial infarcts were found to have lacunar infarcts, and forty-one percent of those with arterial infarcts and sixty-two percent of those with cerebral haemorrhages were found to have hypertension. For example, 81% of people with lacunar infarcts, 80% of people with ganglionic cerebral haemorrhages, and 57% of people with infarcts of the deep arteries of the middle cerebral artery had hypertension. Rheumatic heart disease was responsible for 11% of all arterial infarcts caused by embolisms[9].

Causes of alarm

Studies have identified the following variables as contributors to an increased risk of stroke: age, hypertension, a prior stroke or TIA, and atrial fibrillation. Hypertension is the most important modifiable risk factor for stroke[10]. Stroke risk factors in the Saudi population include systemic hypertension (38%), diabetes mellitus (37%), smoking (19%), and a family history of stroke (14%). Among the many preventable risk factors for stroke, it was shown that hypertension was the most important in the Saudi population. Smoking (2.1%), atrial fibrillation (5.6%), other cardiac problems (5.5%), TIA (2.1%), previous stroke (1.8%), and hypertension (40.4%) were all recognised as risk factors for stroke[11]. High blood pressure was determined to be the primary cause of strokes (52%) in the Saudi population by Awada et al. followed by diabetes mellitus or cardiovascular illnesses. In addition, atherosclerosis accounted for 36% of all causes of strokes, hypertension and/or diabetic artery occlusion accounted for 24%, and cardiac embolisms accounted for 19% of all causes of cerebral infarcts. Hypertensive arteriolopathy accounted for 66.7% of all cerebrovascular accidents, whereas small-artery disease-related strokes (including lacunar infarcts and ICHs) accounted for 47.0%. Smoking, obesity, diabetes, and cardiovascular disease round out the top five risk factors, with hypertension coming in at number one. Having both hypertension and diabetes mellitus seems to be particularly dangerous for women[12]. In addition, antithrombotic medication in atrial fibrillation,

quitting smoking, and maintaining a healthy blood pressure are the most effective modifiable risk factors in preventing stroke.

Aging's effects

Stroke risk has been linked to advancing age. It seems that both industrialised and emerging nations are seeing an increase in their elderly populations, a trend that is anticipated to continue over the next several decades. By 2050, the number of people aged 100 and over is projected to soar to 56.9 million, an increase of about 800% from the current scenario. The frequency or incidence of stroke are particularly high among this population, with consequential effects on morbidity and death. Stroke incidence increased steadily until the seventh decade of life in Saudi Arabia[13]. Reported recently that the incidence of stroke increased between the ages of 61 and 70 and decreased between the ages of 31 and 40. Stroke was shown to be most common between the ages of 61 and 70 in a research conducted in Saudi Arabia[14], with those between the ages of 30 and 40 being the least at risk.

The gender gap

Epidemiological research, mostly based on surveys in Western Europe, has shown that males had a greater incidence of stroke than women, by about 30%. When accounting for intracerebral haemorrhage, the excess was 45% for cerebral infarction, with almost no difference between the sexes. For subarachnoid haemorrhage, the inverse was true; males were shown to be at a disadvantage by almost 50%[15]. There are fewer female stroke patients than male ones, according to the limited known research on this topic in Saudi Arabia. Another research found that male patients were at a greater risk than female patients. According to the results of a research involving 500 stroke patients in Saudi Arabia, 68.4% were male and 31.6% were female[16].

Cognitive and emotional symptoms

It has been shown that depression contributes to increased morbidity by delaying both physical and mental healing. There is a noticeable shortage of information in Saudi Arabia on depression after a stroke. Recent research on a sample of 60 patients found that among those who experienced depression, 7 had mild depression, 2 had moderate depression, and 1 had severe depression[17]. They also found that depression was uncommon in the Saudi cohort after an acute stroke and was significantly associated to the degree of impairment, but not the stroke's cause or location[18].

QoL in terms of one's health

It has been emphasised that HRQOL, which includes physical, cognitive, and social functioning, is an essential indicator of outcome after stroke. A poor HRQOL score in a stroke survivor has been linked to a variety of characteristics, such as old age, female gender, dependence on others for ADLs due to disability, and a lack of social support. During the first several years after a stroke, many studies have shown that a patient's QOL is much poorer than the QOL of the general population, especially in terms of physical aspects[19]. Patients in Saudi Arabia who have had a stroke tend to have a worse quality of life than those in certain other wealthy nations. According to research conducted in Saudi Arabia, HRQOL was significantly affected by age and functional state[20]. They also found a substantial correlation between the Stroke Impact Scale-16 (SIS-16) and results on MMSE and FIM[21].

Hospitalisation Duration

Researchers found that stroke patients' HLoS in the hospital was affected by demographic factors such as age, gender, race, and the presence of medical comorbidities. In addition, preexisting conditions like hypertension, diabetes, or cardiovascular disease might have a negative impact on a stroke patient's functional prognosis and HLoS[22]. However, due to the diversity of the study populations, several research have shown contradictory results. Stroke severity is also a very accurate predictor of HLoS. The average length of stay (HLoS) for stroke patients in Saudi Arabian rehabilitation facilities was 45 days, according to a recent hospital-based research. The HLoS of stroke patients was shown to rise with age, according to several research. The median HLoS for those between the ages of 20 and 30 was 36 days, whereas it was 53 days for those between the ages of 71 and 80. While the 71-80 age group had a little increase, the 81-90 age group saw a minor decline (50 2.4). In addition, they found that across all ages, male Saudis had a longer HLoS than females did. Stroke patients who also suffer from medical conditions including hypertension and diabetes may have a worse functional result and HLoS, according to studies. Due to differences in study populations, several research have found contradictory results. Stroke severity and type are, however, robust and consistent predictors of HLoS[23].

Rehabilitation and medical treatment

In order to maximise the patient's independence and quality of life, neurorehabilitation works to speed up the recovery process. Neurorehabilitation, as defined by WHO, is the process by which people with neurological impairments either fully recover or, if this is not feasible, reach their full physical, cognitive, and social potential and are incorporated back into society. After a stroke has occurred, it is crucial to start therapy immediately[24]. The Saudi Arabian MOH has invested much in the development of rehabilitation programmes for people with disabilities and other citizens during the last two decades. Authorities have paid close attention to rehabilitation programmes and facilities, since they are an essential aspect of contemporary health care delivery services, and have ensured that all citizens and residents have access to services of the highest possible quality. Some medical rehabilitation centres initially appeared in hospitals run by the Ministry of Health around the turn of the twenty-first century. Some private nonprofits, such Humanitarian City in the name of Sultan Bin Abdulaziz, also had their beginnings at this time[25]. "The Rehabilitation Unit of Prince Sultan Military Medical City in Riyadh, the Rehabilitation Hospital of King Fahad Medical City in Riyadh, the King Saud Medical Complex, the Rehabilitation Hospital of Al- Hada Military Hospital in Taif, and the Riyadh Care Hospital are just some of the many rehabilitation hospitals and centres currently available in Saudi Arabia, most of which are located in the country's major cities[26]." Although the country has more than 350 hospitals, only two of them have stroke teams with integrated triaging routes and a beeper system, leaving Saudi Arabia well behind other affluent nations in terms of stroke treatment. Essential and urgent requirements must be handled as soon as feasible in Saudi Arabia, including the establishment of stroke units, the raising of public awareness, the training of healthcare workers, and cooperation. Recent research has also shown that the Kingdom of Saudi Arabia has a significant need for additional rehabilitation centres, rehabilitation medicine doctors, and a team of rehabilitation experts[27].

Conclusion

Millions of people throughout the globe suffer from stroke, which may be severely disabling and even fatal. When brain function suddenly declines because blood supply to the brain is cut off, a medical emergency exists. Stroke is an important public health issue since it may cause serious physical, mental, and emotional problems. Stroke is a growing concern in Saudi Arabia, and knowing the country's stroke statistics is crucial for developing effective healthcare policies and programmes. There is a severe dearth of published studies on stroke in Saudi Arabia. But such studies are crucial for allocating health care resources effectively, putting into place primary preventive measures, and establishing effective management programmes in this field.

Declarations

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