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"NeurologicalDisorders Pattern: Experience From An Outpatients Department, SSKMCH, Gopalganj, Bangladesh"

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ABSTRACT

Introduction: Neurologic disorders represent a major burden of disease globally. Neurologic disorders are not uncommon at in patient departments of different hospitals. These are common and represent a major public health problem.

Objective: To determine the Pattern of Diseases in Neurology Outpatient Department.

Methods: This is a prospective observational study was conducted at Department of Neurology, Sheikh Sayera Khatun Medical College and Hospital Gopalganj, Bangladesh from January 2020 to June 2020 (6 Months). Our study population included 2160 patients. All new inpatient and outpatient presenting to Neurology were eligible for inclusion.

Results: Out of 2160 patients were seen by neurologists within this period of time. The mean age at presentation was 38.4 ± 15.5 years. Most of the patients (64%) presented after the age of forty years. Only (2%) patients were below 10 years. The female patients (1245, 57.63%) predominated. Stroke was the most common neurological diagnosis (635- 29.4%) followed by Radiculopathies (460- 21.2%), Primary headache syndrome (355- 16.5%), Epilepsy (187- 8.6%). But CNS infection (70-3.2%), Cerebral palsy/ mental retardation (68, 3.8%), Bell's palsy (57, 3.1%) Dementia (51, 2.8%), Peripheral neuropathy (36, 1.6%), Mon neuropathies (36, 1.6%) Parkinson disease and other movement disorders (37,1.7%), GBS (33, 1.5%) and Functional (32, 1.4%) were less common. Conditions like Demyelinating illnesses (26, 1.2%), Myasthenia Gravis (23, 1.0%), diseases of spinal cord (20, 0.9%), MND (19, 0.8%), Myopathies (8,0.3%) and Encephalopathies (7, 0.3%) were rare diagnoses.

Conclusion: The spectrum of neurological diseases in Bangladesh is similar to that found in other parts of the country and the region. Stroke, Radiculopathies, Primary Headache and Epilepsy were found to be the most frequent neurological disorders.

Keyword: Neurological diseases, Stroke, Radiculopathies, Primary Headache.

I. INTRODUCTION

Neurological disorders (NDs) are increasing because of demographic and epidemiologic changes occurring in both developed and developing countries. Neurological disorders accounted for 3.0% of global disability-adjusted life-years (DALYs); mainly due to epilepsy and migraines. The overall global burden of neurologic disease is approximately 20%, the majority being in the developing countries [1]. The burden of neurological diseases in developing countries is rising and it is important to know the disease prevalence and pattern based on geographical, social, cultural, religious, and ethnic factors. The overall burden of neurological disorders significantly increases among adults in low- and middle-income countries (LMICs) [2].The incidence of neurologic disorder in UK is 0.6% with an overall 6% lifetime prevalence rate [2]. These diseases account for 83% of the neurological burden. Many patients with acute or chronic neurological problems often get admitted under general medicine and other departments. Some with other primary diagnosis may also develop neurological complication due to course of illness or as a part of complication. Approximately 15-20% of all medical admission and 40% inpatients in medical wards are neurologic problems that often require consultation even in UK [3].Neurology emerged as a different specialty from the internal medicine, during the sixties in Bangladesh. With a boom in the economy, Bangladesh has now become a lower middle income country. Though the infection and malnutrition are common in this part of world [4], with an estimated death of 9 million per year, there

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has been a paradigm shift. Now there is an excess burden of early onset cerebrovascular disease [5]. Report says stroke carries a comparatively higher risk of mortalityin Bangladesh [6]. The most frequent disorders were headache, febrile convulsions, Epilepsy, Stroke and mental retardation. [2] Approximately 40% of the inpatients in medical wards have neurologic problems [3-6]. Apart from infection and malnutrition, an excess burden of cerebrovascular disease and stroke at an early age poses a higher risk of mortality and morbidity [7, 8].

II. METHODS

This is a prospective observational study was conducted at Department of Neurology, Sheikh Sayera Khatun Medical College and Hospital Gopalganj, Bangladeshfrom January 2020 to June 2020 (6 Months). Our study population included 2160 patients. All new inpatient and outpatient presenting to Neurology in PCH, Bangladesh were eligible for inclusion. Patient with hysterical neurological complaints were also included. Patient with depression and anxiety were excluded. Patient's problem was diagnosed clinically with proper history, examination and with help of investigations in required cases. Neurological diagnoses were categorized under 20 broad headings (Figure 3). Analysis was done using SPSS version 21. Mean and standard deviation was calculated for continuous data and number (percentages) for categorical data. Age was into 7 categories. Age and gender specific frequencies of neurological disorder were calculated by chi-square test. All p values were two sided and<0.05 was consider statistically significant.

III. RESULTS

A total of 2160 patients were seen by neurologists within this period of time. The mean age at presentation was 38.4 ± 15.5 years. Most of the patients (64%) presented after the age of forty years. Only (2%) patients were below 10 years. The female patients (1245, 57.63%) predominated [fig.1&2]. Stroke was the most common neurological diagnosis (635-29.4%) followed by Radiculopathies (460-21.2%), Primary headache syndrome (355-16.5%), Epilepsy (187- 8.6%). But CNS infection (70- 3.2%), Cerebral palsy/ mental retardation (68, 3.8%), Bell'spalsy (57, 3.1%) Dementia (51, 2.8%), Peripheral neuropathy (36, 1.6%), Mononeuropathies (36, 1.6%) Parkinson disease and other movement disorders (37,1.7%), GBS (33, 1.5%) and Functional (32, 1.4%) were less common. Conditions like Demyelinating illnesses (26, 1.2%), Myasthenia Gravis (23, 1.0%), diseases of spinal cord (20, 0.9%), MND (19, 0.8%), Myopathies (8,0.3%) and Encephalopathies (7, 0.3%) were rare diagnoses shown (Table 1).

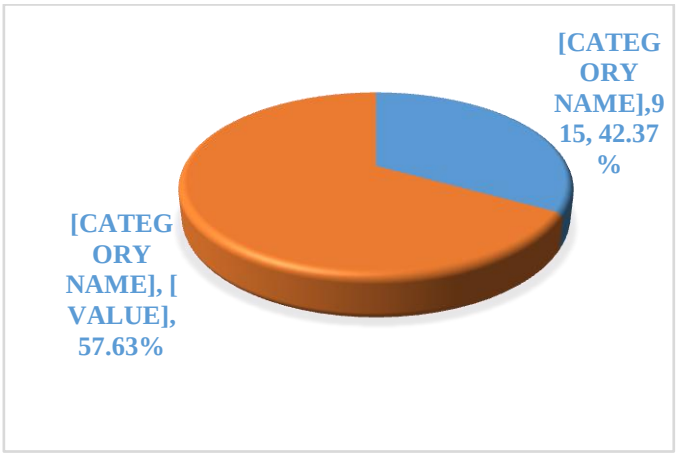

Fig.-1: Sex distribution of Neurological diseases inpatients.

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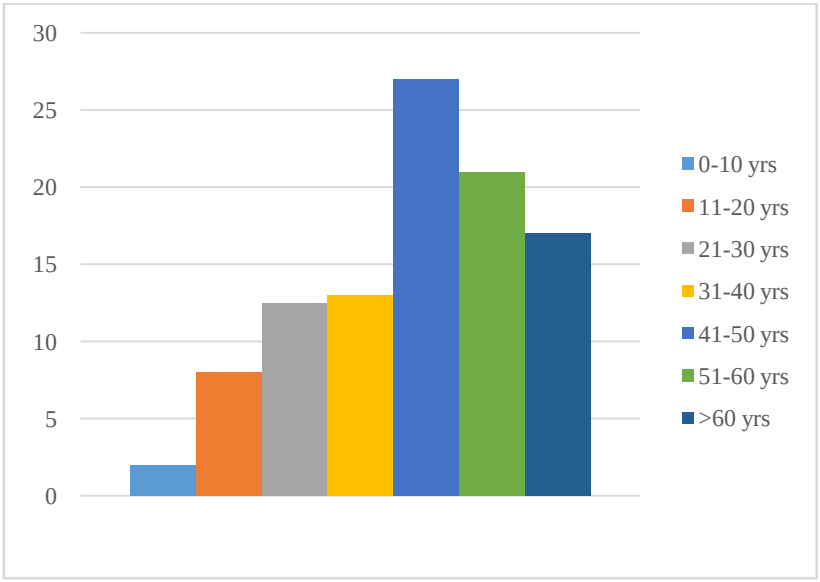

Fig.-2: Compare the age categories with diagnoses.

Table 1: Distribution of Neurological diseases inpatient presenting to Neurology department.

Distribution Of Neurological Diseases	N	Percentage
Stroke	635	29.4%
Radiculopathies	460	21.2%
Primary Headache Syndrome	355	16.5%
Epilepsy	187	8.6%
CNS Infection	70	3.2%
Mental Retardation	68	3.1%
Bell's Palsy	57	3.1%
Dementia	51	2.6%
Peripheral Neuropathy	36	1.6%
Mononeuropathies	36	1.6%
Parkinson	37	1.7%
GBS	33	1.5%
Functional	32	1.4%
Demyelinating Illnesses	26	1.2%
Myasthenia Gravis	23	1.0%
Diseases Of Spinal Cord	20	0.9%
MND	19	0.8%
Myopathies	8	0.3%
Encephalopathies	7	0.3%

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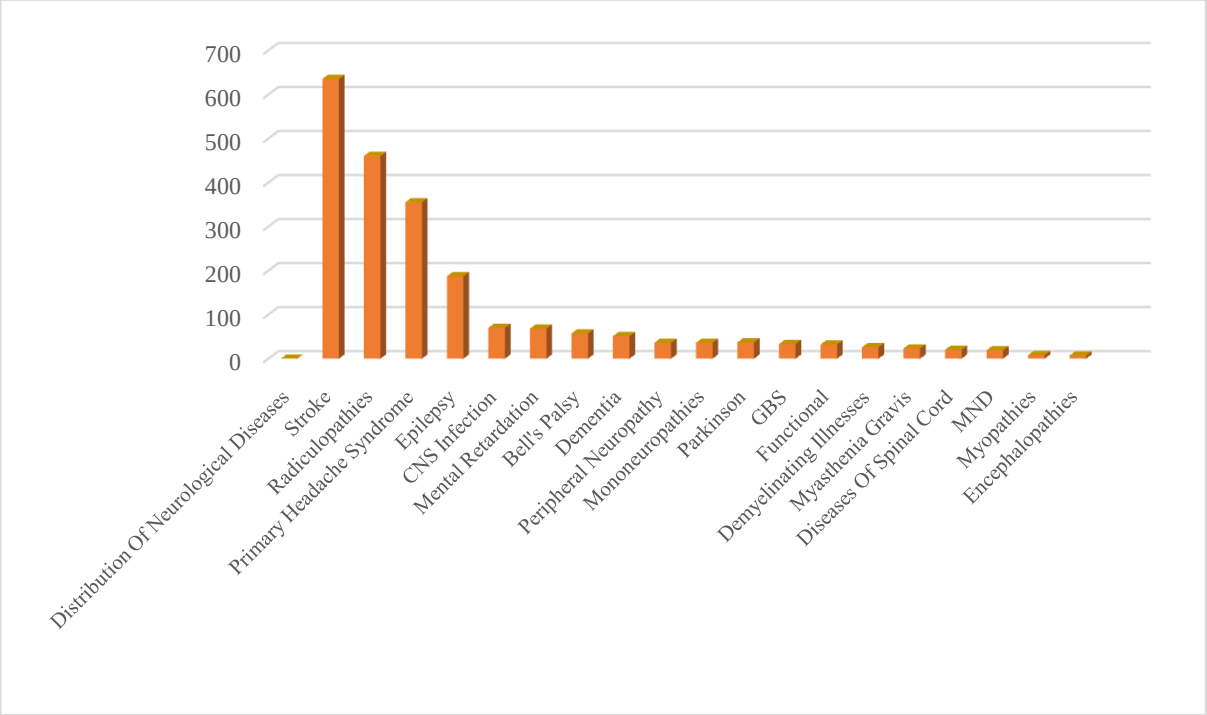

Fig.-3: Distribution of Neurological diseases inpatient presenting to Neurology department.

IV. DISCUSSION

In our study the mean age at presentation was 38.4 ± 15.5 years. Most of the patients (64%) presented after the age of forty years. Only (2%) patients were below 10 years. The female patients (1245, 57.63%) predominated.A study from Nigeria reported 40.8% were aged between 51 and 60 years [9]. The mean age of the study participants was 46 years which was similar to the mean age reported in other studies done in Pakistan [10] and African countries [11,12,13].The patient demographic profile reflects that the proportion of was less as compared to similar studies conducted in Bangladesh and India [14]. Most of the patients in our study, presented after the age of forty years similar to many other studies looking for burden of major Neurological diseases like Stroke, epilepsy etc. Advancing age is one of the important risk factors for these neurological diseases all over the world [15]. In our study, stroke was found to be the most common neurological disease similar to other studies conducted in countries [16,17] In addition to advancing age. Stroke is the major reason for morbidity and mortality in developing world like us. Stroke causes 1.6 million deaths in china and 0.6 million deaths in India [18].The incidence or prevalence of these major neurological diseases in our country is not known [19]. The available information on the pattern and frequency of major neurological disorders in Bangladesh is scanty and limited mainly to hospital-based populations which may not be totally representative of the community. Although the prevalence for ages 24 to 39 years is 4.2%, the prevalence progressively increases with age, reaching 19.6% when patients through age 59 years are included [20]. Primary headache syndromes e.g; Migraine, Tension type headache etc. were found to be the next common neurological condition affecting especially female and middle age group population, presenting mainly to our outpatient department. The frequency of headache in our general neurology out- patient population was found to 12.6%. In other studies, the frequency of headache was found be even higher (25%), patient age, and gender were similar to results in cohorts of headache patients. [21. 22] Epilepsy is amongst the most common serious neurological conditions. The global prevalence of epilepsy is generally taken as between 5 and 10 cases per 1000 persons. Overall prevalence of epilepsy in Bangladesh is estimated to be 7.90 per 1000 population. Highest prevalence is seen in people younger than 30 years of age. [23] The frequency of other neurological problems like, cord disease, Motor Neuron diseases, CNS infection, and peripheral neuropathy was very low. The pattern of these less common diseases, was similar to European studies [24, 25]. Our study gives an idea about the burden of neurological cases in the neurology department of Private care Hospital in Bangladesh.We had some limitations in this study. First of all, patients were seen only once by the

neurologist. So follow up data was unavailable. Secondly, each patient was consulted by a single neurologist. So there is chance of diagnostic variability. Further studies involving large cohorts and cross checking neurologists are required to validate these findings.

V. CONCLUSION

The prevalence of these major neurological diseases in Bangladesh by a national health survey. Accurate and quantifiable data on these major health problems prevalent in a community are required to formulate objective and credible health policies for Neurological diseases in Bangladesh. This will help to further expand the neurological workforce and neurological care in our country.

REFERENCES:

[1]. Awan, S., Shafqat, S., Kamal, A.K. et al. Pattern of neurological diseases in adult outpatient neurology clinics in tertiary care hospital. BMC Res Notes 10, 545 (2017). https://doi.org/10.1186/s13104-017-2873-5

[2]. MacDonald BK, Cockerell OC, Sander JWAS, Shorvon SD: The incidence and lifetime prevalence of neurologic disorder in a prospective community-based study in the UK. Brain. 2000, 123: 665-676. 10.1093/brain/123.4.665.

[3]. Playford ED, Crawford P, Munro PS: A survey of neurological disability at a district general hospital. Br J ClinPract. 1994, 48: 304-306.

[4]. Murray CJL, Lopez AD. The Global Burden of Disease: The World Health Organization and The World Bank. Cambridge, Mass: Harvard University Press; 1996.

[5]. MacKay J, Mensah GA. The Atlas of Heart Disease and Stroke. Geneva: WHO Press; 2004.

[6]. Bhopal R, Rahemtulla T, Sheikh A. Persistent high stroke mortality in Bangladeshi populations. BMJ 2005; 331: 1096–1097.

[7]. MacKay J, Mensah GA: The Atlas of Heart Disease and Stroke. Geneva: WHO Press; 2004.

[8]. Bhopal R, Rahemtulla T, Sheikh A: Persistent high stroke mortal ity in Bangladeshi populations. BMJ 2005, 331:1096–1097.

[9]. Owolabi LF, Shehu MY, Shehu MN, Fadare J. Pattern of neurological admissions in the tropics: experience at Kano, Northwestern Nigeria. Ann Indian Acad Neurol. 2010;13(3):167.

[10]. M Alam S, Khan H, Wahid K. Spectrum of neurological disorders presenting at a neurology clinic in tertiary care hospital in Peshawar, Pakistan. Pak J Neurol Sci. 2015;10(4):23–6.

[11]. Ojini FI, Danesi MA. The pattern of neurological admissions at the Lagos University Teaching Hospital. Niger J Clin Pract. 2003;6(1):38–41.

[12]. Eze CO, Kalu UA. Pattern of neurological admissions in the tropics: experience at Abakaliki South-Eastern Nigeria. Niger J Med. 2014; 23(4):302–5.

[13]. Tegueu CK, Nguefack S, Doumbe J, Fogang YF, Mbonda PC, Mbonda E. The spectrum of neurological disorders presenting at a neurology clinic in Yaoundé, Cameroon. Pan Afr Med J. 2013; 14:148. doi:10.11604/pamj.2013.14.148.2330.

[14]. Chowdhury et al. BMC Research Notes 2014, 7:202

[15]. Gajurel BP, Parajuli P, Nepali R, Oli KK: Spectrum of neurological disorders admitted in Tribhuvan University Teaching Hospital Maharajgunj. J Inst Med 2012, 34(3):50–53.

[16]. Mallik MU, Parvez SI: Disease profile 2011: Internal Medicine. In Year Book 2011. Edited by Azad KAK. Department of Medicine, Dhaka Medical Colledge Hospital. Publisher: BeximcoPharma; 2011.

[17]. Murray CJL, Lopez AD: The Global Burden of Disease: The World Health Organization and The World Bank. Cambridge, Mass: Harvard University Press; 1996.

[18]. Wasay M. Neurological care in Pakistan: actions are needed. J Pak Med Assoc 2003; 53:576.

[19]. Freburger JK, Holmes GM, Agans RP, et al. The rising prevalence of chronic low back pain. Arch Intern Med 2009; 169:251–258.

[20]. Meucci RD, Fassa AG, Faria NM. Prevalence of chronic low back pain: systematic review. Rev SaudePublica 2015; 49:1–10.

[21]. Carson AJ, Ringbauer B, MacKenzie L, et al. Neurological disease, emotional disorder, and disability: they are related: a study of 300 consecutive new referrals to a neurology outpatient department. J NeurolNeurosurg Psychiatry 2000; 68:202–6.

[22]. Larner AJ. NHS Direct for headache. J NeurolNeurosurg Psychiatry 2003; 74:1698.

[23]. Weatherall MW: Acute neurology in a twentyfirst century district general hospital. J R Coll Physicians Edinb 2006, 36:196–200.
[24]. Chapman FA, Pope AE, Sorensen D, Knight RS, Al-Shahi Salman R: The uses of a rapid access neurology clinic. J R Coll Physicians Edinb 2009, 39:296–300.
[25]. Wasay M, Khatri IA, Kaul S. Stroke in South Asian countries. Nature Rev Neurol. 2014;10(3):135.