

Epidemiological Study of Aphasia, Dysarthria, Dysphagia Sequel to Stroke in Coastal Regions of Karnataka

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Abstract

The present retrospective study was aimed at documenting the prevalence rates of various communication disorders and swallowing disorders as a resultant of stroke and other neuropathological conditions in a tertiary super speciality neuro Hospital. Stroke is one of the major causes of neurological communication disorder in adults. The growth of neurological communication disorder in coastal regions of Karnataka due to stroke in a period of six months from first of January to July 2018.

Prevalence of Dysphagia, Aphasia and Dysarthria sequel to stroke and other neuropathologies in a total of 177 individuals was documented in the mentioned period. Radiological investigations served as basis for the inclusion of participants. It was found that the prevalence of dysarthria (36.15%) constituted the major neurogenic communication disorder among the stroke survivors.

The age range of 60-70years older were at the higher risk of neuro-communicative disorder compared among 20 to 90 years of age. It was highly prevalent in males than females, with the rate of 59% in males and 41% females. Medical diagnosis based on various sites of lesion and neurological causes such as Left and Right Middle Cerebral Arteries, Subcortical lesions, Degenerative conditions, Cerebellar Infarct, Thalamic Bleed and LMN lesions were taken into consideration. It was noted that higher rates of prevalence of neurological disorders due to stroke were cerebellar infarct (18.07%) followed by right MCA infarct (17.5%).

This study calls for urgent strategies to establish patient registry and outreach neurological services for individuals with stroke to address various communication, cognitive and swallowing deficits. An organised effort from both the government and the private sector is needed to tackle these associated deficits of stroke in the coastal regions of Karnataka.

Keywords: Incidence, Prevalence, Neurogenic Communication Disorders, Aphasia, Dysarthria.

Introduction

Stroke is a leading cause of neurogenic disorders. The key risk factors leading to the stroke and the demographic changes in the country are becoming an important cause of premature death and disability in low-income and middle-income countries like India.

Communication and swallowing problems are common as a result of neurological conditions like stroke, traumatic brain injury, neoplasms of the nervous systems, viral encephalitis, diseases affecting neuromuscular junction and neuro degenerative conditions. The most frequently encountered problems are dysarthria, aphasia, dysphagia and apraxia of speech.

Speech language pathologist plays an important role as a member of the rehabilitation team in a neurological setup with respect to identifying these problems and initiating intervention at the earliest. Hence, it is necessary for speech language pathologists to be well versed with the features each disorder may present in terms of communication and swallowing.

In a study by Mansi J, et al., 2014, it was reported that the most frequently occurring disorder was dysarthria (60%), followed by dysphagia (55%) and aphasia (18%). Study also revealed that the dysarthria and dysphagia co-existed in around 45% patients with neurological diseases.

There is dearth of research on the incidence and prevalence study of associated speech and language problems in Indian scenario. The poor are increasingly affected by stroke, because of both the changing population exposures to risk factors and, most tragically, not being able to afford the high cost for stroke care. The majority of stroke survivors continue to live with disabilities, and the costs of ongoing rehabilitation and long-term care are largely undertaken by family members, which impoverish their families. Studying the burden of stroke and the availability of health services will help policy makers to tackle the rising burden of disability through proper channelled speech and language rehabilitation and swallowing retraining.

Aim And Objectives

The study aimed at investigation of distribution of Neurogenic Communication disorders and Dysphagia sequel to Stroke registered at Tertiary Neuro-Super specialty Hospital during the time period of 1st January 2017 to 1st July 2018. The current study had the following objectives of documenting the frequency of occurrence of language disorders specific to Aphasia and other non-aphasic language Disorders following Stroke. The second objective of the study was to document frequency of occurrence of the speech disorders namely Dysarthria

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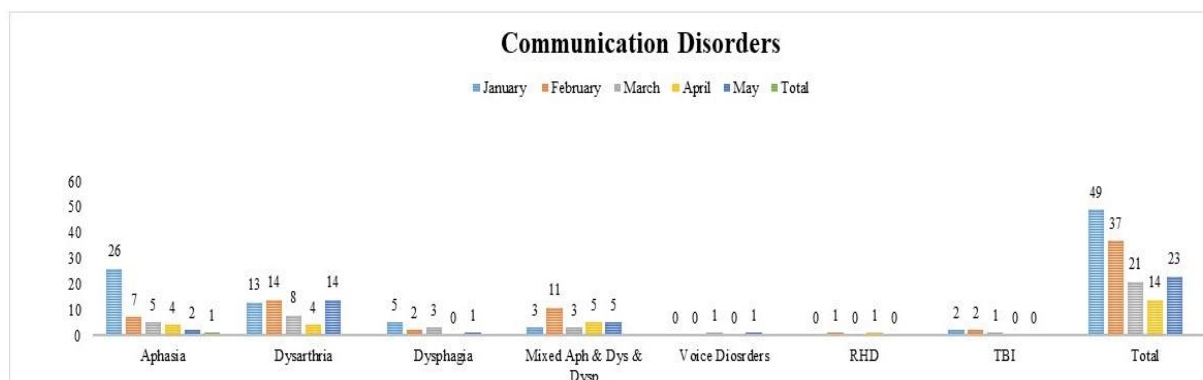
and Apraxia caused due to Stroke. The third objective of the study was to document the occurrence of Dysphagia sequel to Stroke. The fourth objective was to document the prevalence of above-mentioned disorders across age and gender.

Methodology

A heterogenous group of 177 patients with neurological conditions were assessed for presence of speech, language, and swallowing problems. A percent analysis was carried out to determine the occurrence of aphasia, dysarthria, and dysphagia in general, in specific diseases and also to describe type of aphasia and dysarthria according to the characteristics presented.

Results And Dscussion

Condition	Aphasia	Dysarthria	Dysphagia	Mixed Aph & Dys & Dys	Voice Disorders	RHD	TBI	Total
January	26	13	5	3	0	0	2	49
February	7	14	2	11	0	1	2	37
March	5	8	3	3	1	0	1	21
April	4	4	0	5	0	1	0	14
May	2	14	1	5	1	0	0	23
June	8	11	4	5	0	2	3	33
Total	0	0	0	32	2	4	8	177



According to the study, the prevalence of aphasia from January to June was 26,7,5,4,2 and 8 respectively with a total of 52. Dysarthria prevalence were 13,14,8,4,14 and 11 in each month with the total of 64 patients. 15 Dysphagia patients, 32 patients with mixed aphasia, dysarthria and dysphagia. Voice disordered patients were 2, 4 RHD patients and 8 TBI patients.

The prevalence of neurogenic disorders in the month of January were 49, in the month of February were 37, 21 in the month of March 14 in the month of April, 23 in the month of May and 33 in the month of June.

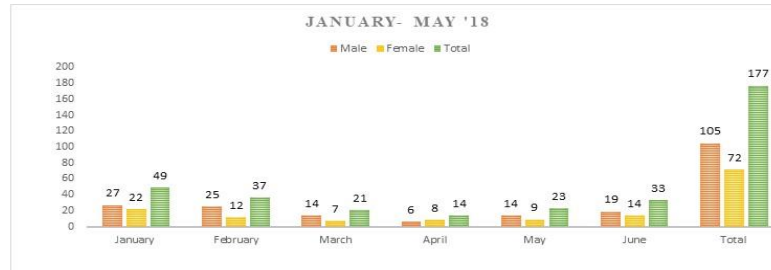
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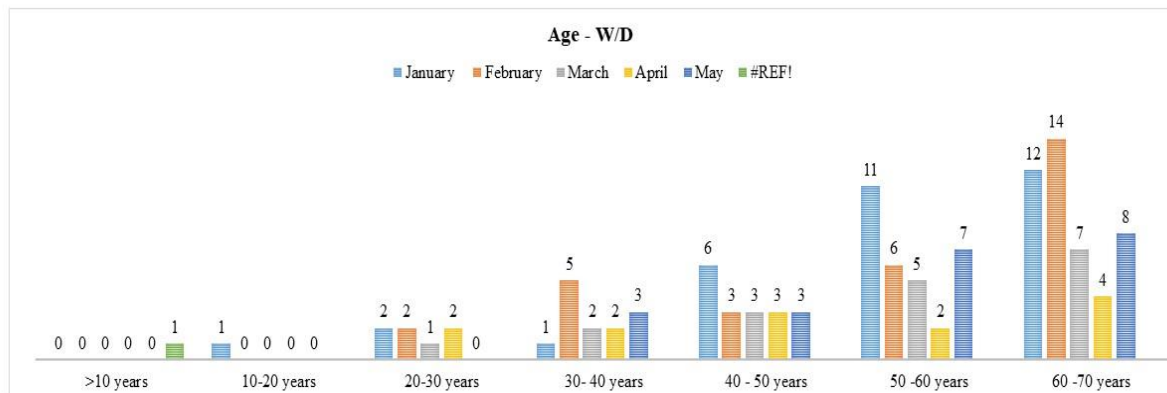
Statistics-First Neuro Super speciality Outreach Centre

Gender	Male	Female	Total
January	27	22	49
February	25	12	37
March	14	7	21
April	6	8	14
May	14	9	23
June	19	14	33
Total	105	72	177



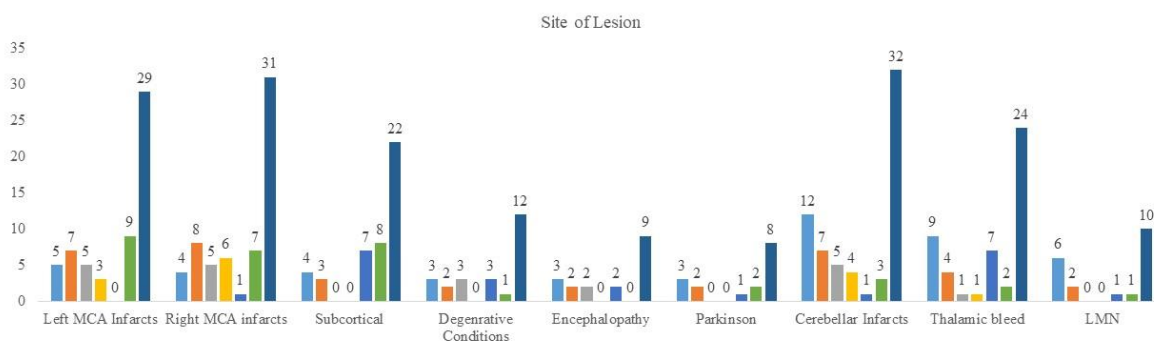
There were 177 neurologically disorder patients, among them 59% were males and 41% were females. Among them out of 49 patients, 55% of males and 45% of females were affected in the month of January. 68% of males and 32% of females out of 37 patients were affected in the month of February, in the month of March 67% were males and 33% were females with a total number of 21 patients. In APRIL 43% of the patients were males and 57% of them were females. In the month of May among 23 patients, 61% were males and 39% were females and in the month of June among 33 patients 58% were males and 42% were females.

Age	>10 years	10-20 years	20-30 years	30-40 years	40-50 years	50-60 years	60-70 years	70-80 years	80-90 years
January	0	1	2	1	6	11	12	14	2
February	0	0	2	5	3	6	14	6	1
March	0	0	1	2	3	5	7	1	2
April	0	0	2	2	3	2	4	0	1
May	0	0	0	3	3	7	8	2	0
June	0	0	2	1	1	8	10	9	4



The prevalence study was done on the age groups between >10 years to 90 years with age gap of 10 years with 9 groups. From the age group >10 years there were no patient. In the age group of 10 to 20 years there was 1 patient, from the age group of 20 to 30 years there were 9 patient, from the age group 30 to 40 years there were 14 patient, from the age group 40 to 50 years 19 patient, from the age group 50 to 60 years there were 39 patient, 60 to 70 years there were 55 patient, from the age group 70 to 80 years there were 32 patient and from the age group 80 to 90 years there were 10 patient.

Med.Diagnosis	Left MCA Infar	Right MCA in	Subcortical	Degenrative Conditions	Encephalopathy	Parkinson	Cerebellar Infarcts	Thalamic bleed	LMN
January	5	4	4	3	3	3	3	12	9
February	7	8	3	2	2	2	2	7	4
March	5	5	0	3	2	2	0	5	1
April	3	6	0	0	0	0	0	4	1
May	0	1	7	3	2	1	1	1	7
June	9	7	8	1	0	0	2	3	2
Total	29	31	22	12	9	9	8	32	24



Taking into account the medical diagnosis, among 177 patients, 29 were affected due to left MCA infarct, 31 due to right MCA infarct, 22 due to Subcortical lesion, 12 had degenerative conditions, 9 with encephalopathy, 8 parkinsonism, 32 patients had cerebellar infarcts, 24 had thalamic bleed and 10 with LMN lesion. Most of the individuals affected were due to cerebellar infarcts with 18.07 % followed by right MCA infarct with the prevalence of 17.51%.

Conclusions

It can be concluded that speech, language and swallowing problems are frequent in individuals with neurological conditions. Speech language pathologist plays an important role as a member of the rehabilitation team in a neurological setup with respect to identifying these problems and initiating intervention at the earliest. Hence, it is necessary for speech language pathologists to be well versed with the features each disorder may present in terms of communication and swallowing.

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