

## **Post Stroke Psychiatric Morbidity Among Hemiplegics in Manipur**

**Dr Ak. Joy Singh**, MBBS, MD (PMR), DNB (PMR), DSM, Associate Professor (PMR)

**Dr Rk. Lenin**, MBBS, MD (Psy.), Assistant Professor (Psychiatry)

**Dr Kunjabasi Wangjam**, MBBS, MS (Ortho), DNB (PMR), Professor and Head (PMR)

**Dr L Nilachandra Singh**, MBBS, Senior Registrar (PMR)

Department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences, Imphal

### **Abstract**

**A study was conducted in 50 hemiplegic patients with a minimum of 3 months duration to find out any association of psychiatric morbidity in hemiplegics by using the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) and Present State Examination (PSE). Depression was found in 24%, anxiety disorders in 26%, adjustment disorders in 12% and sexual dysfunction in 50% of the cases. Twenty-eight percent of the patients also had other psychiatric comorbidity. Early recognition and treatment of such problems in stroke patients will certainly help in the early recovery.**

### **Introduction**

World Health Organisation (WHO) defined stroke as a "rapidly developing clinical signs of local (at times focal) disturbance of cerebral function lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular origin<sup>1</sup>. In developed countries, stroke is the third commonest cause of death after heart disease and cancer<sup>2</sup>. The annual incidence of stroke is 2 per 1000 population, and the prevalence rate is about 5 per 1000 population<sup>1</sup>. In India, epidemiological information on annual incidence or prevalence rates and morbidity trends in defined populations are not available<sup>3</sup>. A community survey from different regions of India showed a crude prevalence rate for stroke in the range of 200 per 100000 persons<sup>4</sup>. Eighty percent of the strokes are due to cerebral infarction, 10% to primary intracerebral haemorrhage, and 10% to subarachnoid haemorrhage<sup>5</sup>. In Asia, the proportion due to primary intracranial haemorrhage is rather higher; about 25 to 35%<sup>1</sup>.

Stroke is an important cause of impairment and disability. It often results in major changes in a person's life: stroke survivor can suffer loss of health, occupation, social role and independence. Major depression is a common occurrence<sup>6</sup>. The recognition and treatment of depression is important as depression is associated with increased disability<sup>7,8,9</sup>, increased cognitive impairment<sup>10,11</sup>, increased suicidal tendency and mortality<sup>12,13,14</sup> and poor rehabilitation outcomes<sup>15</sup>.

Hemiplegics, over and above their physical inabilities, also suffer from psychological, cognitive and social changes, which are more painful and injurious to the patient and family<sup>16</sup>. Mood disorders are common but often unrecognised companion of stroke. The reported prevalence of post stroke depression (PSD) varies from 20% to 65%<sup>17, 18</sup>. Studies on the neuropsychological correlates, persistence of PSD and psychological evaluation of these patients are very few<sup>19,20</sup>.

We also feel that studies on the neuropsychiatric and emotional aspect of hemiplegics, which play a vital role in recovery, are scarce, particularly in our set up. This study is planned to examine the prevalence of psychiatric morbidity in hemiplegic patients after 3 months of onset of hemiplegia in Manipur.

### **Material and Methods**

A study was conducted in 50 post stroke hemiplegic patients, who attended the department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences, Imphal during the period July 2004 to January 2005. Diagnosis was clinically established and confirmed by CT scan. Patients with acute physical complications and having gross impairment in comprehension and expression of speech, uncooperative patients, and patients with past history of psychiatric illness were excluded from the study.

Assessment tools consisted of a) a semi structured proforma, b) Diagnostic and Statistical Manual of mental disorders, fourth edition (DSM-IV)<sup>22</sup> and c) Present State Examination (PSE), 9<sup>th</sup> edition<sup>23</sup>. The first interview was performed when the patient was readmitted in the Physical

---

*Address for correspondence: Dr Ak Joy Singh, Associate Professor, Department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences, Imphal-795004 E-mail: joyakoijam2@yahoo.com*

Medicine and Rehabilitation ward after 3 months of the onset of hemiplegia. Patients were first evaluated for the symptoms by using PSE and if psychiatric disorder was present, then diagnosis of psychiatric morbid condition was made by using DSM-IV guidelines.

Statistical analysis was performed by using Chi-square test wherever suitable.

**Results**

Out of the 50 patients, 12 were females and 38 were males. Twenty two patients had left sided involvement. Seventy percent of patients (n=30) belonged to the age group 46 to 65 years with only 4% (n=2) patients in the age group 26-35 years. Associated medical problems like hypertension in 56% (n=28), diabetes mellitus in 12% (n=6), alcoholic liver diseases in 10% (n=5) and ischaemic heart diseases in 8% (n=4) cases were noted. Fifty-six percent of them were smokers and 28% of them were found hyperlipidemic.

Psychiatric morbidity was seen in 84% (n=42) of cases which was statistically significant (p<0.001). Table I shows distribution of patients with respect to psychiatric morbidities. Sexual dysfunction was the commonest disorder and 14 patients (28%) had sexual dysfunction associated with either depression or anxiety.

Table I: Distribution of Psychiatric Morbidity in Hemiplegic patients

| Psychiatric Morbidity | At 3 months |                |
|-----------------------|-------------|----------------|
|                       | Number      | Percentage (%) |
| Depression            | 12          | 24             |
| Anxiety Disorder      | 13          | 26             |
| Adjustment disorder   | 6           | 12             |
| Sexual Dysfunction    | 25          | 50             |

(14 patients had more than one diagnosis)

**Discussion**

In the initial 2 months, the symptoms, signs and behavioural problems of psychiatric disorders overlapped with normal grief reaction towards physical disorders and also cognitive impairment in memory, orientation, language, attention and visuospatial functions present in majority of patients<sup>23,24,25</sup>. Such disorders may still persist in about 35% to 60% of cases until 3 months, which may create a bias in a prevalence study. Also the peak prevalence of mood disorders appears to be around 3 to 6 months after the attack of stroke; although the prevalence remains high even after 1 to 3 years of the stroke attack<sup>26</sup>. Hence, the first assessment was done only at 3 months of onset of hemiplegia.

Our study consists of 28 males and 12 females. Kotila M<sup>25</sup> and Numminen et al<sup>27</sup> also reported higher incidence in males below 65 years of age, thereafter it equalizes

with increasing age. Seventy percent of patients in the present study belonged to age group 36 to 65 years. Kotila M<sup>25</sup>, Dobkin B<sup>27</sup>, and Numminen et al<sup>26</sup> also reported increase in the incidence with increasing age.

In the present study, 42 out of 50 patients had at least one type of psychiatric morbidity. Many had more than one disorder co-existing together. The disorders found in the present study were depression (24%), anxiety disorders (26%), adjustment disorder with depressed mood (12%), and sexual dysfunction (50%). There was additional psychopathology found in the present study; post traumatic stress disorders like symptomatology in 8% of subjects and suicidal thoughts and plan in 4% of cases with depression. We have not come across cases with post-stroke mania, post stroke psychosis, anosognosia with denial of illness, catastrophic reaction with violence though there are reports in the literature. Percentage of depression in the present study (24%) is comparable with different authors (22% to 27%) who studied at 3 months from stroke<sup>24,29,19,30</sup>. Astrom<sup>19</sup> reported 28% occurrence of anxiety disorders and Castillo et al<sup>31</sup>, 23% and 28% when co-morbid with major depression in post stroke patients. These findings are similar with the present study (26%). However, post traumatic stress disorder like anxiety was found in 8% of subjects, which did not fulfil the criteria as a separate disorder entity. Tang et al<sup>32</sup> reported association of adjustment disorder in 8.2% of patients against 12% in the present study.

Fifty percent of the subjects were having sexual dysfunction. The problems were mainly due to lack or loss of sexual desire and erectile disorders, reduced and loss of vaginal lubrication, reduced or cessation of coitus and loss of sexual satisfaction. Sjogren et al<sup>33</sup> found sexual dysfunction in 75% females and 64% males, although there were no endocrinological deficits or medications including antihypertensive treatment explainable to cause sexual dysfunction. Hawton<sup>34</sup> reported that 50% of subjects had recovered from sexual dysfunction at 6 months.

**Conclusion**

Hemiplegic patients are often having complications with psychiatric morbidity such as depression, anxiety disorders, adjustment problems and sexual dysfunction, etc. These complications hinder in the physical recovery of the patients. Therefore, such association of psychiatric morbidity in hemiplegic patients should be recognised in time and appropriate treatment should be done along with management of hemiplegia to improve their neuro-motor function.

## References

1. World Health Organisation: MONICA project. *Clinical epidemiology* 1998; 41: 105-14.
2. World Health Organisation: The World Health Report. GENEVA: WHO; 1998: 87-89.
3. Park K. Stroke. In: Park's textbook of preventive and social study. Park K, ed. 14<sup>th</sup> edn. Jabalpur: Banarasidas Bhanot Publishers; 1994: 258-59.
4. Dalal PM and Dalal KP. Hypertension. Stroke. In: Current concepts of hypertension. Sainini GS, ed. Bombay: Indian College of Physicians; 1995: 107-17.
5. Walker AE, Robins M, Weinfeld FD. Clinical findings in the National Survey of Stroke. *Stroke* 1981; 12 (Supple No. 1): 113-14.
6. Burvill P, Johnson G, Jamrozik K, Anderson C, Steward-Wynne E, Chakera L. Prevalence of depression after stroke: The Perth Community Stroke Study. *Br J Psychiatry* 1995;166 (3): 320-27.
7. Lenze E, Rogers J, Martire L, Mulsant B, Rollman B, Dew M. The association of late-life depression and anxiety with physical disability: A review of the literature and prospectus for future research. *Am J Geriatr Psychiatry* 2001; 9 (2): 113-35.
8. Kanhonen M, Korpelainen J, Hiltunen P, Brusin E, Mononen H, Maatta R, et al. Post stroke depression correlates with cognitive impairment and neurological deficits. *Stroke* 1999; 30 (9): 1875-80.
9. Ng K, Chan K, Straughan P. A study of post stroke depression in a rehabilitative centre. *Acta Psychiatry Scand* 1995;92: 75-79.
10. Austin M, Mitchell P, Goodwin G. Cognitive deficits in depression: Possible implications for functional neuropathology. *Br J Psychiatry* 2001;178: 200-06.
11. Butters MA, Becker JT, Nebes RD, Zmuda MD, Mulsant BH, Pollock BG, Reynolds CF 3rd. Changes in cognitive functioning following treatment of late-life depression. *Am J Psychiatry* 2000;157(12):1949-54.
12. Schulz R, Beach S, Ives D, Matire L, Ariyo A, Kop W. Association between depression and mortality in older adults: The cardiovascular health study. *Arch Intern Med* 2000; 160: 1761-68.
13. Kishi Y, Kosier JT, Robinson RG. Suicidal plans in patients with acute stroke. *Journal of Nervous and Mental disease* 1996;182: 274-80.
14. Parikh R, Robinson R, Lipsey J, Starkstein S, Federoff J, Price T. The impact of post stroke depression on recovery in activities of daily living over a 2-year follow-up. *Arch Neurol* 1990; 47 (7):785-89.
15. Gillen RTH, McKee TE, Gernert-Dott P, Afflect G. Depressive symptoms and history of depression predict rehabilitation efficiency in stroke patients. *Arch Phys Med Rehabil* 2001;82 (12): 1645-49.
16. Brooks DN. The head-injured family. *J Clin Exp Neuropsychol* 1991;13: 115-88.
17. Primeau F. Post stroke depression: Critical review of literature. *Can J Psychiatry* 1998;33: 757-65.
18. Robinson RG, Bolduc PL, Price TR. Two year longitudinal study of post-stroke mood disorders: diagnosis and outcome at one and two years. *Stroke* 1987;18: 837-43.
19. Astrom M, Adolfson P, Asplund K. Major depression in stroke patients -A 3 years longitudinal study. *Stroke* 1993;24: 976-82.
20. Sharpe M, Hawton K, Seagroatt V, Bamford J, House A, Molyneux A, Sandercocke P, Warlow C. Depressive disorders in long term survivors of stroke. Associations with demographic and social factors, functional status, and brain lesion volume. *Br J Psychiatry* 1994; 164: 380-86.
21. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. Edn. 4. New Delhi :Jaypee Brothers (P) Ltd: 1995
22. Wing JK, Cooper JF, Sartorius N. The description and classification of psychiatric symptoms. An instruction manual for the PSE and CATEGO system. London: Cambridge Univ. Press: 1974.
23. Tatamichi TK, Desmond DW, Stern Y, Paik M, Sano N, Bagiella E. Cognitive impairment after stroke: Frequency patterns and relationship to functional abilities. *J Neurol Neuro Surg Psychiatry* 1994;57: 202-07.
24. Pohjasvaara T, Leppavuori A, Siira I, Vataja R, Kaste M, Erkinjuntti T. Frequency and clinical determinants of post-stroke depression. *Stroke* 1998;29: 2311-17.
25. Kotila M. Declining incidence and mortality of stroke. *Stroke* 1984; 15: 255-59.
26. Whyte, Ellen M, Mulsant, Benoit H. Post-Stroke Depression: Epidemiology, Pathology and Biological Treatment. *Biol Psychiatry* 2002; 52: 253-64.
27. Numminen H, Kotila M, Waltimo O, Aho K, Kaste M. Declining incidence and mortality rates in Finland from 1972 to 1991. Result of three population-based stroke register. *Stroke* 1996; 27: 1487-91.
28. Dobkin B. The economic impact of stroke. *Neurology* 1995;45 (suppl): 56-59.
29. Gainotti G. Disorders of emotions and affect in patients with unilateral brain damage. In: Boller F, Grafman J (eds). *Handbook of Neuropsychology*. Amstersdam: Elsevier: 1989, 345-61.
30. Hermann N, Black SE, Lawrence J, Szekely C, Szalai JP. The Sunnybrook Stroke study. A perspective study of depressive symptoms and functional outcome. *Stroke* 1998;29: 618-24.
31. Castillo CS, Schultz SK, Robinson RG. Clinical correlates of early onset and late onset post stroke generalised anxiety. *Am J Psychiatry* 1995; 152(2):1174-79.
32. Tang W, Ungvari GS, Chiu HFK, Sze K, Woo J, Kay R. Psychiatric morbidity in first time stroke patients in Hong Kong: a pilot study in a rehabilitation unit. *Aust and NZ J of Psychiatry* 2002; 36: 544-49.
33. Sjogren K, Dauber JE, Liliequist B. Sexuality after stroke with hemiplegia: Aspects of sexual function. *Scand J Rehabil Med* 1983; 15(2): 55-61.
34. Hawton K. Sexual adjustment of men who have had strokes. *J Psychosomatic Research* 1984; 28: 243-49.

Post Stroke Psychiatric Morbidity Among Hemiplegics in Manipur. Article. L Nilachandra Singh. A study was conducted in 50 hemiplegic patients with a minimum of 3 months duration to find out any association of psychiatric morbidity in hemiplegics by using the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) and Present State Examination (PSE). Depression was found in 24%, anxiety disorders in 26%, adjustment disorders in 12% and sexual dysfunction in 50% of the cases. Among the etiological factors of Wilson's disease it is advisable to distinguish between external and internal factors. At various times as possible vnesnesre pa etiological factors figured infection " " lesion that develops at the age of 5-18 years; less often (in 30%) " " with neurological and psychiatric disorders. Significantly less likely the onset of the disease with hemolytic crisis and hemolytic anemia (Kegaraform). The course of the disease can be fulminant and slowly progressing. Post-Stroke Hemiplegic Gait: A Review. S Javed Ali, Abdul Nasir Ansari, Azizur Rahman, Shiekh Imtiyaz, Basharat Rashid. Abstract Stroke is one of the leading causes of mortality and morbidity worldwide. After a stroke, the ability to control balance in the sitting and standing positions is a fundamental skill of motor behavior for achieving autonomy in everyday activities. Initial walking function is impaired in two-thirds of the stroke population and this impairment is the greatest contributor to functional disability after stroke. Post-Stroke Hemiplegic gait is typical pattern of walking. Th...