Pakistan Journal of Neurological Sciences (PJNS)

Volume 15 | Issue 4 Article 3

12-2020

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SPECTRUM OF FUGITIVE DIAGNOSIS OF NEUROLOGICAL DISORDERS IN ELDERLY

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Date of submission: *April 17, 2020* ***Date of revision:*** *September 23, 2020* ***Date of acceptance:*** *September 26, 2020*

ABSTRACT

BACKGROUND Fugitive diagnosis "escape from true diagnosis" of neurological disorders is very common in elderly patients. It's not always an underlying disease symptom or progression in old age. Aim of this study is to determine the frequency and nature of fugitive diagnosis of neurodegenerative brain disorders in old age.

MATERIAL AND METHODS

STUDY DESIGN A study was conducted in private Neuro-clinic in Lahore. Study duration is 3 years from to 1st January, 2017 to 31th December, 2019. It was a prospective, cross sectional study. Inclusion criteria: 1) Age >60years 2) Neurodegenerative brain disorders including vascular dementia 3) with or without associated co morbidities e.g., DM, HTN, IHD. Exclusion criteria: age <60, all acquired other neurological disorder

RESULTS

Total number of patients (n=2570) visited to Neuro-clinic with various neurological disorders.950 patients had neurodegenerative diseases. A total of 241 patients(n=241) with neurodegenerative diseases like Parkinson's disease, Alzheimer's disease, Lewy body disease vascular dementia and fronto-temporal dementia having fugitive diagnosis during their course of treatment were included in the study. Study sample consisted of 134 males and 107 female patients. The patients included in study were aged equal to or more than 60 years. True diagnosis was as follows; refusal to take oral medications or keeping food in mouth 73/241, (30.29%), misdiagnosed as advanced dementia or early Alzheimer's disease, Serotonin Syndrome 23/241, (09.54%), Subacute Encephalopathy 67/241, (27.80%) caused by infections e.g. urinary tract infection or pneumonia, hyponatremia, were taken as advanced widespread disease or deepening encephalopathy due to metabolic cause, Depression in 47/241, (19.50%), was taken as worsening of symptoms or polypharmacy. Impulse control disorders 31/241, (12.86%) were misdiagnosed as extremes of behavior with efforts leading to hospitalization in psychiatric institution.

CONCLUSION

Fugitive diagnosis in patients with neurologic symptoms and signs, especially in neurodegenerative disorders results in worsening of patient condition with no chance of benefit. The patient is subjected to inappropriate, ineffective and potentially harmful treatment. Fugitive diagnosis fails to address symptoms, delays appropriate therapy, and may lead to worst prognosis. Finally, it may lead to unnecessary higher cost of treatment for patient in particular and health care system in general. So clinical guidelines should be made to overcome these situations.

KEYWORDS: Fugitive diagnosis, Neurodegenerative brain disorders, Old age, Depression, Impulse control disorder (ICD), Serotonin syndrome

INTRODUCTION

Neurodegenerative diseases are not the normal part of ageing. Alzheimer's disease, Parkinson's disease, vascular dementia and frontotemporal dementia are the main neurodegenerative diseases affecting elderly population. Alzheimer's disease is characterized by progressive impairment in cognition including memory, language, visuospatial orientation and executive functions. [(1)] Diagnosis of Alzheimer's disease mostly relies on history and physical examination. Diagnostic evaluation of suspected Alzheimer patient includes thyroid function tests, vitamin B12 levels, and serology for syphilis, HIV, Lyme and neuroimaging to rule out the structural causes. [(2)]

Parkinson's disease involves motor and non-motor

manifestations. Motor features include rigidity, bradykinesia, tremor and postural instability late in disease [3]. Dopaminergic drugs, monoamine oxidase inhibitors (MAOI), catecholamine -o- methyl transferase (COMT) are treatment options available currently [4]. Cerebrovascular disease is the leading cause of dementia in elderly. [5] Vascular dementia results from multiple cortical infarctions in strategic areas of the brain (5). Vascular dementia has a stepwise and slower progression and is potentially preventable if risk factors are adequately treated and recognized in time. Fronto-temporal dementia (FTD) is a non-Alzheimer's dementia and encompasses diverse clinical presentation such as behavior, language and movement disorders, occurs between the ages of 45-65 years. [6]

Elderly patients may present with overlapping features of multiple disorders. Therefore, elderly patients require multidisciplinary approach to distinguish age related changes versus underlying disease, superimposed infections, polypharmacy, psychiatric disturbance and delirium.

Depression is more prevalent in younger than in older population and manifests differently. Depression in older population uncompressed more cognitive symptoms than affective symptoms. Thus have devastating consequences. [7] Therefore may leads to unnecessary diagnostic evaluation for underlying malignancy and sepsis.

It is very common to hear from caregivers or from loved ones about challenges of administrating medication to patients with Alzheimer's or other dementias. [8] This resisted behavior should be promptly investigated and dealt with. Ask about the discomfort caused by medications or their side effects that are not communicated to patient and care giver because of patient fear such as pills are bitter or hard to swallow. [9]. Management of such problems should be taught and told to caregivers and attendants of the patient, proactive solution is sought. Never force the patient, keep calm and try after sometime again, stick to the routine, if side effects are reported, talk to the physician. [10]

Impulse control disorders (ICD) are defined as compulsive, pleasurable behaviors performed repetitively and excessively [11]. Typical symptoms include pathological gambling, hypersexuality, binge eating, compulsive shopping and behavioral disorders (Punding, hobbyism) [12]. Incidence of impulse control disorders (ICDs) in Parkinson's disease is 13%. [13] Dopaminergic agonists are associated with 2-to 3.5-fold increase risk of ICDs in patients with Parkinson's disease [14.]

Patients who are on antidepressants, or antipsychotics should be assessed frequently for signs of serotonin syndrome prior to labelling progression or part of underlying disease. Alternative diagnosis or reversible conditions other than underlying disease progression and worsening should be sought judiciously [15]

This study was conducted to determine the frequency and nature of fugitive diagnosis of Neuro-Degenerative brain disorders in old age.

MATERIAL AND METHODS

A Cross Sectional, Prospective study was conducted in a private Neuro- clinic in Lahore from 1st January 2017 to 31th December 2019. Inclusion criteria: 1) Age >60yrs 2) Neurodegenerative brain disorders including vascular dementia 3) with or without

associated co morbidities e.g. DM, HTN, IHD. Exclusion criteria: age <60, all acquired other neurological disorders.

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS version-23. Data for age, gender, true diagnosis for neurodegenerative diseases, causes of encephalopathy were described by using frequency and percentages. Mean and standard deviation were calculated for quantitative variables.

RESULTS

Total number of patients (n=2570) visited to Neuro-clinic with various neurological disorders.950 patients had neurodegenerative diseases. A total of 241 patients(n=241) with neurodegenerative diseases

like Parkinson's disease, Alzheimer's disease, vascular dementia and frontotemporal dementia having fugitive diagnosis during their course of treatment were included in the study. Study sample consisted of 134 males and 107 female patients.

The patients included in study were aged equal to or more than 60 years. patients' symptoms were considered as part of disease progression but true diagnosis was as follows; refusal to take oral medications or keeping food in mouth 73/241, (30.29%), was due to poor oral cavity hygiene and denture problems which was misdiagnosed as advanced dementia or early Alzheimer's disease.

Serotonin Syndrome was present in 23/241 patients, (09.54%).

Subacute Encephalopathy 67/241, (27.80%) caused by infections e.g., urinary tract infection or pneumonia, hyponatremia as these metabolic causes are reversible conditions, not a part of progression of disease, were taken as advanced widespread disease or deepening encephalopathy due to metabolic cause. Depression was reported in 47/241, (19.50%), is an associated but treatable condition, was taken as worsening of symptoms or can be a part of polypharmacy. Impulse control disorders 31/241, (12.86%) as part of drug side effect, can be lessen with reducing the dose or using alternative medication, were misdiagnosed as extremes of behavior with efforts leading to hospitalization in psychiatric institution.

Patients with Alzheimer's disease (19 /241), Parkinson's disease (57 /241), Frontotemporal dementia (4/241), vascular disease (94 /241) delirium (67 /241).
Comorbidities Diabetes mellitus (43/241), Hypertensive (33/241), Ischemic heart disease (38/241)

Patients resisting medications or refusal to cope up with personal and oral hygiene are the most frequent and serious complaints in clinic from caregiver or relatives that we must investigate. In our study highest number of patients 73/241, (30.29%) were reported with refusal to take oral medication or keeping food in mouth, 41 males, 32 females, were misdiagnosed as advanced dementia or early Alzheimer's disease. Table given below.

Table 1 –age distribution for patient (refusal to intake)

Age groups (years)	Total number of patients	Males	Females
60-69	29	14	15
70-79	21	13	8
80-89	13	7	6
90-99	9	6	3

Serotonin syndrome is a commonly encountered as side effect of antidepressants and atypical antipsychotics in patients who are being treated for psychotic depression [15]. Major features of serotonin syndrome include wide variety of symptoms mental status changes such as delirium, restlessness, irritability and anxiety, autonomic manifestations such as diaphoresis, tachycardia, hypertension, hyperthermia and vomiting and diarrhea [16]. Among elderly mortality is reported to be 11% [17]. Serotonin syndrome frequency reported in our study is 23/241, (09.54%), 12 males and 11 females.

Table 2 – Age Distribution (serotonin syndrome)

Age groups(years)	Total number of patients	Males	Females
60-69	8	4	4
70-79	5	2	3
80-89	7	3	4
90-99	3	3	0

Subacute encephalopathy 67/241, (27.80%) was caused by infections e.g. urinary tract infection or pneumonia, electrolyte abnormalities as hyponatremia.It was misdiagnosed as advanced widespread disease or deepening encephalopathy due to underlying disease progression.

Table 3 - age distribution (sub-acute encephalopathy)

Age groups (Years)	Total number of patients	Males	Females
60-69	28	16	12
70-79	19	10	9
80-89	11	6	5
90-99	8	5	3
>100	1	0	1

Table 5-Causes of sub-acute encephalopathy

Causes	No of patients
Urinary tract infection	46/67
Pneumonia	12/67
Electrolyte imbalance	9/67

Depression is not a normal part of aging. Elderly have less obvious symptoms of depression, such as feeling tired, trouble sleeping and irritability, but they do not present with sadness [18]. Depression in our study reported to be among 47/241, (19.50%), (33 males, 14 females) was taken as worsening of symptoms or polypharmacy.

Table -3 age distribution for depression

Age groups(Years)	Total number of patients	Males	Females
60-69	26	19	7
70-79	13	8	5
80-89	3	2	1
90-99	5	4	1
>100	-	-	-

Though evidence of ICDs is fairly common, yet are under-reported by patients and not frequently recognized by clinicians. ICDs carry significant morbidity and mortality, and

are treatable by combination of pharmacotherapy and behavioral therapy. [19]. Impulse control disorders 31/241, (12.86%), (18 males, 13 females), were misdiagnosed as extremes of behavior leading to hospitalization and were attributed to dopaminergic drugs.

Table- 6 age distribution for impulse control disorders (ICD)

Age groups (Years)	Total number of patients	Males	Females
60-69	8	6	2
70-79	9	5	4
80-89	7	3	4
90-99	6	3	3
>100	1	1()	-

DISCUSSION

Challenges often arise during evaluation of an elderly patient and are due to multiple comorbidities, polypharmacy and ageing.

Delirium is the greatest geriatric symptom in the emergency department and frequently misdiagnosed. [20] It has varied presentations in elderly. Most difficult patients are those who have underlying neurodegenerative disease-causing dementia or behavioral features. Most delirious cases are mishandled and mistreated. Delirium is confused with underlying disease progression, worsening or cause is pinned on ageing process without giving an effective thought to infections, side effects of drugs, polypharmacy and depression.

Antidepressants and antipsychotics are usually administered to control the behavioral symptoms associated with dementia among elderly. Interactions of drugs should be checked prior to administering medications because polypharmacy and medication interaction puts them at higher risk of serotonin syndrome. Treatment of serotonin syndrome is to discontinue causative agent, provide supportive care, and with benzodiazepines. Benzodiazepines should be given in lower doses and with caution in older people. [21] Think about possible cause of serotonin syndrome if older patient presents with altered mental status, inquire about the recent changes in medications or addition of new medications.

Symptoms of depression in older adults can mistakenly be attributed to other illnesses, medications and ageing. [22] Older adults are at risk of misdiagnosis and lack of treatment because their symptoms can mimic normal age- related issues. (22) According to American Academy of Geriatrics Psychiatry most common symptoms related to depression in elderly includes; persistent sadness, feeling tired or slowed down, excessive worries about health problems, anxiety, sleep problems, feeling helpless. [23] There is always a risk of suicide with major depressive disorder, therefore by early treatment and recognition. This dreadful consequence can be avoided.

Our study main aim was to determine how many patients who have multiple comorbidities and underlying neurodegenerative disorder are treated when presented with delirium. It was found that most patients refused to take medications because of some reason that was not recognized by their caregiver or doctor. Diagnosis is difficult in elderly patients with multiple comorbidities; therefore, an algorithm should be made to counterpoise the issue.

CONCLUSION

Fugitive diagnosis in patients with neurologic symptoms and signs, especially in neurodegenerative disorders results in worsening of patient condition with no chance of benefit. The patient is subjected to inappropriate, ineffective and potentially harmful treatment. Fugitive diagnosis fails to address symptoms, delays appropriate therapy, and may lead to worst prognosis. Finally, it may lead to unnecessary higher cost of treatment for patient in particular and health care system in general. So clinical guidelines should be made to overcome these situations.

REFERENCES

1. Armand S. Schachter, M.D and Kenneth L. Davis, MD Alzheimers disease .Dialogues Clin Neurosci. 2000 Jun; 2(2): 91–100

2. McKhann G., Drachman D., Folstein M., Katzman R., Price D., Stacllan EM. Clinical diagnosis of Alzheimer's disease: report of the NINCDS-ADRDA Work Group under the auspices of Department of Health and Human Services Task Force on Alzheimer's Disease. Neurology. 1984; 34:939–91

3. Abou-Sleiman PM, Healy DG, Quinn N, Lees AJ, Wood NW. 2003. The role of pathogenic DJ-1 mutations in Parkinson's disease. Ann Neurol 54: 283–286. 10.1101/cshperspect.a008870

4. Zesiewicz TA, Sullivan KL, Arnulf I, Chaudhuri KR, Morgan JC, Gronseth GS, Miyasaki J, Iverson DJ, Weiner WJ, Quality Standards Subcommittee of the American Academy of Neurology 2010. Practice parameter: Treatment of nonmotor symptoms of Parkinson disease: Report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 74: 924–931 [PubMed] [Google Scholar]

5. Lee AY. Vascular Dementia. Chonnam Med J. 2011 Aug;47(2):66-71.

6. Craig D, Birks J. Galantamine for vascular cogni tive impairment. Cochrane Database Syst Rev. 2006;(1):CD004746

7. Fiske A, Wetherell JL, Gatz M. Depression in older adults. Annu Rev Clin Psychol. 2009; 5:363–389. doi: 10.1146/annurev.clinpsy.032408.153621
8. Sözeri-Varma G. Depression in the elderly: clinical features and risk factors. Aging Dis. 2012;3(6):465–471.
9. Barua A, Ghosh MK, Kar N, Basilio MA. Preva lence of depressive disorders in the elderly. Ann Saudi Med. 2011;31(6):620–624. doi:10.4103/0256-4947.87100
10. Mirkena Y, Reta MM, Haile K, Nassir Z, Sisay MM. Prevalence of depression and associated factors among older adults at ambo town, Oromia region, Ethiopia. BMC Psychiatry. 2018;18(1):338. Published 2018 Oct 18. doi:10.1186/s12888-018-1911-8
11. Impulse control disorders in Parkinson's disease. Marques A, Durif F, Fernagut PO J Neural Transm (Vienna). 2018 Aug; 125(8):1299-1312.).
12. The neurobiology of impulse control disorders in Parkinson's disease: from neurotransmitters to neural networks. Vriend C Cell Tissue Res. 2018 Jul; 373(1):327-336
13. Martini A, Dal Lago D, Edelstyn NMJ, Grange JA and Tamburin S (2018) Impulse Control Disorder in Parkinson's Disease: A Meta-Analysis of Cognitive, Affective, and Motivational Correlates. Front. Neurol. 9:654.
14. Parkinson disease and impulse control disorders: a review of clinical features, pathophysiology and management. Wu K, Politis M, Piccini P Postgrad Med J. 2009 Nov; 85(1009):590-6
15. Kohen I1, Gordon ML, Manu P. Serotonin syndrome in elderly patients treated for psychotic depression with atypical antipsychotics and antidepressants: two case reports. CNS Spectr. 2007 Aug;12(8):596-8
16. Christopher Frank, Recognition and treatment of serotonin syndrome Can Fam Physician. 2008 Jul; 54(7): 988–992. PMID: 18625822
17. Gillman PK. The spectrum concept of serotonin toxicity. Pain Med. 2004;5(2):231–2
18. Barua A, Ghosh MK, Kar N, Basilio MA. Preva lence of depressive disorders in the elderly. Ann Saudi Med. 2011;31(6):620–624. doi:10.4103/0256-4947.87100
19. Tamam L1, Bican M1, Keskin N2.Impulse control disorders in elderly patients Compr Psychiatry. 2014 May;55(4):1022-8. doi: 10.1016/ j.comppsych.2013.12.003. Epub 2013 Dec 12.
20. Jannet Carter. Depression in older adults BMJ 2011;343:d5219
21. Volpi-Abadie J, Kaye AM, Kaye AD. Serotonin syndrome. Ochsner J. 2013;13(4):533–540.
22. Papazacharias A, Logroscino G, Barulli MR, Nardini M. Late life depression and late onset depression: are the same clinical and pathopsysio logical picture? Psychiatr Danub. 2010;22(Suppl 1):108–10.[PubMed] [Google Scholar]
23. Park M, Unützer J. Geriatric depression in primary care. Psychiatr Clin North Am. 2011;34(2):469–x. doi:10.1016/j.psc.2011.02.009

Conflict of interest: Author declares no conflict of interest.
Funding disclosure: Nil

Author's contribution:
Safia Bano; concept, data collection, data analysis, manuscript writing, manuscript review
Ayesha Aslam; data collection, data analysis, manuscript writing, manuscript review
Adnan Tariq; concept, data collection, data analysis, manuscript writing, manuscript review
Adnan Mahmood; data collection, data analysis, manuscript writing, manuscript review
Rashid Imran; concept, data collection, data analysis, manuscript writing, manuscript review
Ahsan Numan; data collection, data analysis, manuscript writing, manuscript review

PREVALENCE OF DEPRESSION IN PATIENTS WITH MIGRAINE, A CROSS-SECTIONAL STUDY FROM A TERTIARY CARE HOSPITAL

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Date of submission: *April 29, 2020* ***Date of revision:*** *September 15 2020* ***Date of acceptance:*** *September 25, 2020*

BACKGROUND
Headache is one of the most common presenting complaints in patients attending primary care centers and the majority of them have primary headache syndromes. Depressive disorders are among the leading causes of disability globally and can further complicate the clinical manifestation if coupled with other comorbidities. Therefore, the primary objective of our study was to determine the prevalence of depression in migraine patients presenting at a tertiary care hospital to better understand the leading causes of the disease.

METHODS
A cross-sectional study was carried out between December 2019 and June 2020 (six months) including 66 migraine patients between 18 and 45 years of age presenting to the neurology outpatient clinics at a tertiary care hospital in Karachi, Pakistan. Non-probability convenience-based sampling technique was used to calculate the sample size, and the data was collected via face-to-face interviews. The first section of the questionnaire consisted of socio-demographic factors such as age, gender, educational, occupational, and marital status in addition to the clinical characteristics such as the duration of the disease and the frequency of migraine attacks. The second section assessed the depressive symptoms of the participants using the Patient Health Questionnaire-9 (PHQ-9) and any patient with a score of five or more was considered as suffering from a depressive disorder. All statistical analysis was conducted using Statistical Package for Social Sciences (SPSS) version 23.0.

RESULTS
Out of a total of 66 participants, almost two-third (n=43, 65.2%) were males, while nearly one-third (n=23, 34.9%) were females. The average age of the patients was 27.59±5.37 years. The frequency of depression was observed in approximately three-quarters (n=49, 74.2%) of the migraine patients in our study. The prevalence of depression was only significantly associated with disease duration (p=0.027) and the number of migraine attacks (p=0.015).

CONCLUSION
In conclusion, the prevalence of depression was found to be significantly high among migraine patients, therefore migraine might be related to depression. Depression should not be ignored while evaluating migraine subjects for good prognosis and management of the disease.

KEYWORDS migraine, psychiatric disorders, depression

INTRODUCTION

Migraine is a chronic neurological disorder that is characterized by pulsating headache (i.e. feeling of fullness over the forehead) that occurs in recurrent attacks and is often unilateral [1]. It can be accompanied by other clinical manifestations including