Review Article

Behavior Management of Dementia Patients: A Review

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Abstract

It is increasingly achieving concern that pharmacological treatments for dementia should be used as a second-line approach in the comparison of non-pharmacological approach. This review focuses on both pharmacological and non-pharmacological approaches. It highlights the new discovered drugs as well as some traditional non-pharmacological treatments such as behavioral therapy validation therapy and reality orientation etc., and also observes the contribution of other interesting alternatives such as aromatherapy, cognitive therapy, and music therapies, etc. Both of the pharmacological and non-pharmacological treatments have reported welfare in various research studies. Some more reliable and valid data should be collected before the potentials of these approaches are recognized more widely.

Keywords: Dementia, Mental health, Psychosocial, Treatment

INTRODUCTION

Dementia is defined as a generic term indicating a loss of intellectual functions including memory, significant deterioration in the ability to carry out day-to-day activities, and often, changes in social behavior.[1] Dementia is increasingly spreading widely all over the world in many forms with aged persons. In this regard psychologists' interest has grown in the use of psychosocial interventions with traditional pharmacological and non-pharmacological treatment for demented people. An intense review of empirical studies and systematic researches has been accomplished on wide range of such interventions to examine their potentials. Although, a little account has been taken in the regard of the appropriateness of psychosocial interventions for those people, who are in different stages of the illness.[2] Assessment of patient's present condition is helpful, before judging the management and formulating the target behavior. Some major points in the assessment include:

- Cognitive functions-it includes the areas of preserved functions or those areas which have a lesser degree of impairment; it is helpful to identify the person's style of coping and its management.
- Life story-it includes the preferences or choices of the patient.
- Person's behavior is causing distress-what and when circumstances.
- Social network-available resources of social network come in this category.

TYPES OF DEMENTIA

Alzheimer's Disease (AD)

AD is the most common cause of dementia. Many symptoms like memory problems, continuous deterioration in the ability to perform daily living basic activities, and changing behavior, social withdrawal and apathy are most common, and behavioral disturbances also. Abnormal function and ultimately death of selected nerve cells in the brain causes AD. The patients have following diagnosis; have an average survival period for 8-10 years.[3]

Vascular Dementia

The vascular disease has a complex and controversial role in the etiology of dementia is. There seems to be a direct chronological relationship between significantly cerebrovascular events and the onrush of dementia in some cases. Eventually, patients may present with signs of stroke or other vascular problems, i.e., hypertension ischemic heart disease. Onset of dementia may be precipitous, or there may

be sudden declining periods, followed by relative stability. Some physical problems such as decreased mobility, urinary incontinence and balance problems are more common in vascular demented people than those with AD.

Dementia with Lewy Bodies (DLB)

Most common symptoms of DLB are wavering awareness of day-to-day activities and symptoms of parkinsonism like rigidity, tremor and deceleration of movement or scarcity of expression. Frequent occurrence of delusions or visual hallucinations. Steep descents are also common. DLB is similar in pathological basis to Parkinson's disease dementia, and both of them are associated with successive cognitive deterioration and parkinsonism. It has been reported that after 10 years, about 3/4th of aged people with Parkinson's disease acquire dementia.[4]

Fronto-temporal Dementia (FTD)

It is a type of dementia (FTD) that is exceptional in the comparison to AD or vascular dementia, but symbolizes a significant ratio of people who develop dementia till the age of 65. Changing of behavior like lack of judgment, disinhibition, decline of social awareness and insight are more common in the comparison of memory problems. Mood swings, continence and disturbed speech are frequent. It is rare to have a positive family history of a similar disorder.

Mixed Dementias

A person can develop a mixture of two or more of the active dementias, which is usually dominating from one to another. Various studies recommend that there is an extremely complex interaction between vascular disease and the central features of AD and that inflexible boundaries between subtypes of dementia may be redundantly unreal. Responding towards treatment or side effects from treatment in patients with mixed dementia may vary from people with a specific diagnosis.[5,6]

Creutzfeldt-Jakob Disease (CJD)

There is one more uncommon type of dementia known as CJD, which includes the accumulation of an abnormal protein, in which the brain leads to a quick decline of nerve cells. Some common problems such as behavioral and mood disturbance are present in the form of tremor, balance problems and impaired mobility. It has been often found that after the onrush of clinical symptoms of illness, death takes place within 1-2 years.[3]

SIGN AND SYMPTOMS

Some characteristic features of dementia can be described by deterioration in various cognitive domains and its functions, such as:

- Memory loss (amnesia).
- Disturbed receptive or expressive skills of language and speech (aphasia).
- Imperfection in motor functions (apraxia).
- Unable to identify objects (agnosia) or a familiar face (prosopagnosia).
- Unevenness in executing functions like organizing, planning, sequencing of tasks and abstract thinking.
- Deterioration in daily living activities and social activities.
- Disturbed cognitive functions such as short-term memory loss, which is more severe than episodic memory loss.
- Impaired attention and concentration, disorientation of judgment and impaired semantic memory.
- Increased delusions and hallucination with paranoid ideas associated with various things and persons.
- Inappropriate and distracted behavior, restlessness, sexual disinhibition and lack of interests.
- Irritability, anxiety, depression and liability.
- Dyssomnia or parasomnia.[7,8]

STAGES OF DEMENTIA

Three main stages of dementia have been studied till now in a broader perspective. It is very difficult to be ensured the onset of the illness and the exact timing of the transformation of one stage of dementia to the next one.

- The patient may be considerably more apathetic, lose his interest in leisure and hobbies, find the simple tasks more complex and difficult, and have impaired memory in the early stage of dementia. Delusions and hallucinations take place, which results in blaming on others for stealing and misplacing the things. Depression is one of the major sign, which is due to the loss of insight and disturbed cognitive functions.
- In the mild dementia, cognitive symptoms are more frequent, and self-care is progressively become problematic. Behavioral and psychological disorder such as aggression, agitation, and psychosis are more obvious to occur at this stage of dementia.
- The patient requires 24 h care for routine functions such as bathing, changing of clothes and toileting in a severe stage of dementia. Difficulties in physical problems like walking and talking, and involuntary urination and defecation may also be seen. Sleep disorders, agitation and aggressive behavior are frequent in this stage of illness. The patient becomes bedfast in the last few weeks of his life.[9]

CAUSES OF DEMENTIA

- Idiopathic or degenerative-DLB, AD and Huntington's chorea, etc.

- Head injury.
- Intracranial lesions-such as subdural hematoma, brain tumor.
- Vascular.
- Infections-such as neurosyphilis.
- Hormonal or metabolic dysfunction-such as hypothyroidism and severe kidney disease, etc.
- Intoxication through drug or alcohol.
- Lack of appetite or anoxia - e.g. after cardiac arrest or carbon monoxide poisoning.
- Vitamin deficiency - e.g. B12.[8]

TREATMENT

There are mainly two forms of treatment of dementia, which are as follows: Pharmacological and non-pharmacological. Management of behavioral disturbance should be done through both pharmacological and non-pharmacological approaches. The pharmacological interventions are usually considered as much competent etiology of the behavioral disturbance than non-pharmacological, but it may be problematic if delirium is treated through antibiotics as an underlying infection. Depression (one of the major sign of dementia) is reduced by using antidepressants, but before applying the pharmacological approach, non-pharmacological approaches should be considered as a first step in the intervention of dementia.[10]

NON-PHARMACOLOGICAL TREATMENT

Non-pharmacological interventions are used to ensure the underlying causes of behavioural disturbance of dementia. It is also used to explore and to provide personalised approaches to treat behavioral and psychological symptoms or neuropsychiatric symptoms of the illness. In this section, the therapeutic interventions which are usually assessed in clinical trials are listed here in alphabetical order.[1]

Behavior Management

Behavioral management is used to represent the structured environment that is systematically applied and usually time-limited interventions, which are carried out by home care staff in the vigilance of a professionally expert in this area. Behavior management is used as an intervention program for those patients, who live in various types of residential settings, but this is associated with the severity level of dementia in individuals. The largest and the most complex duration of the intervention and its study period is up to 12 weeks.[11]

Behavior management may be used to crease the level of depression in people with dementia. Various studies suggest that the decline this therapy is useful for those patients who have repetitive verbalizations, management of eating behaviors and management of aggression and they have a very positive effect of this therapy on their behavior and well-being.

Multi-dimensional behavior management programs may give more effective results than interventions of individual in the improvement of the behavior as well as the well-being of demented people. This method cannot be suggested for other symptoms of dementia because there is a shortage of reliable evidences. More studies should be done in this area for reliability increment and should be varied according to the severity of dementia.[12]

Caregiver Intervention Programs

This form of intervention expands from the simplest reassurance to the extremely complex multi-dimensional interaction with the demented people, including a caregiver residential program. Present guidelines assessed only organized caregiver intervention programs. This treatment has minimal and time-limited clinical impact on the patients, but those have great benefit of this program who are suffering from severe dementia. Comprehensive and professional training of interventions is required for caregivers for effective results to treat dementia patients.[13]

Cognitive Stimulation

Recreational activities help to create cognitive stimulation. It can be done formally through a memory provoking program, conversational fluency and problem-solving activities through spaced retrieval method including face name training. A positive clinical effect is produced through formal cognitive stimulation in dementia patients. The training of cognitive stimulation can be started at home by a caregiver. The risk level for the patients can be declined with minimal training or education of the carer.[14]

Environmental Design

This type of designing includes residential unit design, such as corridor configuration to reduce restlessness, anxiety and disorientation in people with dementia who are institutionalized. It has been reported that people with dementia experience rapid impairment of memory and cognitive decline. It is needed to have such an environment that increases orientation. A number of studies have reported that positive changes in the environment can affect the patients positively who are suffering from dementia. This method usually measures the problem behaviors with activities of daily livings (ADLs) and cognitive and social activities. This type of intervention includes simple modifications in the physical environment, e.g. signage and homelike environments, ADLs, behavior, and orientation. Small size groups living in, had a positive therapeutic effect.[15,16]

Multisensory Stimulation (MSS) and Combined Therapies

Studies recommend that through MSS several sensory modalities can be gained rather than single-sense stimulation in dementia. In this approach various equipments are used, e.g. relaxing music, lighting effects, massage cushions, tactile surfaces, recorded sounds, and fragrances in the creation of a multisensory stimulating environment. Some other studies have observed the use of combinations of aromatherapy with essential oils like lavender and lemon balm, massage, and music.[17]

Aroma therapy

Aromatherapy is one of the major randomized controlled trials in the intervention of people with dementia. It has been observed that *Melissa officinalis* (lemon balm) have a positive impact on agitation even in the case of continued receiving of neuroleptic medication by the patient, but the possibility of dose adjustments during the study period, can create the confounding the results. *Lavendula officinalis* (lavender oil) has not proved much efficient to reduce the associated symptoms of dementia in the patient. The aromatherapy should be used after the consultation of qualified aroma-therapist.

Light therapy

Irregularity of sleep in demented people can be much distressing and troublesome for carers. This is due to the biological changes in the brain which disturb the normal circadian rhythm and sleep/wake cycle. With the help of bright light, production of melatonin is affected, which may decrease these problems. This is an intensive labor program, and sometimes it faces the problems regarding the control of studies of staff interaction and it maintains blinding also. This therapy is not suggested for the intervention of cognitive impairment, agitation, and sleep disturbance in people with dementia.[18,19]

Music therapy

Various studies suggested that exposure to music, suitable to the individual's choice, can decrease agitation but not the aggressive behavior in demented people. It is difficult to ensure whether the desired effects seen are the result is due to music therapy itself or because of other factors, e.g. researcher's presence. Music therapy is convenient to imply, but further researches are needed to determine its beneficial aspect for a person with dementia.[20]

MSS

MSS is difficult to imply and not easy to tolerate by everyone. The variations in severity level of dementia between the intervention and targeted groups in studies decrease the reliability and validity of conclusions which are obtained. Multisensory environments help to individuals to expose less confusion and to talk more spontaneously with normal length sentences.

- MSS may be a clinically useful intervention for people with moderate dementia.
- This therapy is not suggested for relief of neuropsychiatric symptoms in moderate to severe demented people.[21,22]

Physical activities

Exercise programs for dementia patients includes improvements in walking, ambulatory status, endurance and urinary continence, but lack of reliable evidence for its support. Various meta-analysis studies showed that the exercise has a statistically significant positive outcome in people who aged over 65 and have dementia and cognitive impairment. An amalgamation of structured exercise and conversation may help to maintain mobility in people with dementia.[23]

Reality orientation therapy (ROT)

ROT is one of the major approaches in psychosocial intervention in the care of people with dementia. The aim of ROT is to re-orientate the patient through continuous stimulation and the repetitive orientation toward the environment. This may be formally done in a daily group session, or informally in the way of communicating with individual with involving the orientation to place, time, and the person in the whole day (24 h methods). ROT should be carried out by a skilled practitioner with those people who are disorientated in time, place and person, on an individualized basis.[24,25]

Recreational activities

Recreational activities help to engage the people with dementia in meaningful activities and frequently used as a way of enhancing the individual's need for communication, sense of identity, self-esteem, and productivity. This approach used a number of activities including self-expression in the form of drawing, arts and crafts, music, cooking, games and interacting with pets. Recreational activities are helpful to people with dementia to enhance their quality of life and well-being.[25,26]

Simulated presence

The purpose of this therapy is to keep the environment as familiar as possible for the patient with dementia to reduce his anxiety and distress. It includes the making of a recording of a familiar person to the patient and playing it into the front of the patient. The content of the can be varied according to the interests of the individual patient concerned. Simulated presence therapy was associated with improved alertness for nursing home residents, but no clinical benefits are provided compared to a placebo tape recording.[25,27]

Validation therapy

Validation therapy is used to communicate with elderly people who are disorientated; it involves acknowledging and supporting the feelings in of the patients, whatever time and place are seem real to them, even without corresponding with their "here and now" reality. This is different from ROT, whose aim is to drawn the person in the present reality. The main benefit of validation therapy is the restoration of self-worth and minimization of the degree of patients' withdrawal from outside the world. It promotes the communication and interaction of the patient with other people and helps to reduce the stress and anxiety stimulation. It helps them to resolve the unfinished tasks of their lives and facilitates the independent living for as long as possible.[28-30]

PHARMACOLOGICAL TREATMENT

The suggestions given in this field are based upon an interpretation of the available evidence to examine clinical potentials of this approach. Cost effectiveness has not been included in it. The core features of this illness are reducing cognitive and dexterous motor ability. A large number of problems are associated with it, which often occur, but not in uniform way. These kinds of problems are referred as behavioral and psychological symptoms of dementias (BPSD), which can develop a severe distress for the patients, as well as their carers, also. The presentation of the following symptoms such as irritability, agitation, sleep disturbance, hallucinations, delusions or aggression may lead the patient to the hospital or institutional care.[1]

These symptoms are associated traditionally with the use of antipsychotic, antidepressants or anxiolytic drug or medication. The problematic behavior of patients may also be influenced by the use of acetylcholinesterase drugs (Tables 1 and 2).

Vascular Dementia or Stroke Related Dementia

Brief evidence has been found associated with the treatment of behavioral and psychological disorder in vascular dementia or stroke-related dementia. Some drugs such as cholinesterase inhibitors (galantamine; rivastigmine; donepezil) and memantine are not licensed to be used for the treatment of vascular dementia. It is important for the prescribers to follow the guidelines to use drugs with extreme cautions for AD, keeping the established increased cerebrovascular risk (i.e., antipsychotics) in mind.[32]

Other BPSD and Other Dementias (e.g. Fronto-temporal Lobe Dementia)

The treatment of another BPSD has a little evidence base or for the curing of common BPSD in other forms of

Table 1: Index to core and associated symptoms and pharmacological interventions[31,32]

Key symptom	First line	Evidence type	Second line	Evidence type
Depression	Sertraline, citalopram	2−3+£	Mirtazapine	3
Psychosis	Risperidone	1	Olanzapine, quetiapine, memantine, haloperidol	2
Aggression	Risperidone	1	Olanzapine, quetiapine, memantine haloperidol	2
Moderate agitation/anxiety	Citalopram	3	Trazodone, mirtazapine	4
Severe agitation/anxiety	Risperidone	1	Olanzapine, or memantine±short term benzodiazepine if atypical inappropriate	1,2
Poor sleep	Temazepam, zopiclone	3+£	Clomethiazole	

Table 2: DLB or Parkinsons disease dementia[7,31]

DLB or Parkinson's disease dementia key symptom	First line PDD	First line LBD	Evidence type	Second line PDD	Second line LBD	Evidence type
Depression	Citalopram		4+£	Sertraline	4	
Psychosis	Quetiapine	Rivastigmine; donepezil galantamine	3	Clozapine, rivastigmine	Memantine	2-3
Aggression	Quetiapine	Rivastigmine donepezil; galantamine	3	Rivastigmine	Memantine	3
Moderate agitation/anxiety	Citalopram	3+£	*Rivastigmine	Rivastigmine donepezil S; galantamin		2-3
Severe agitation/anxiety	Quetiapine	Rivastigmine donepezil galantamine	3	Rivastigmine±short term benzodiazepine	Memantine±short term benzodiazepine	3
Poor sleep	Temazepam, zopiclone		3+£	Clomethiazole	3	
REM sleep behaviour (nightmares, hyperactivity)	Clonazepam			3		

PDD: Parkinson's disease dementia, LBD: Dementia with Lewy bodies, REM: Rapid Eye Movement

Table 3: Drug dose guidelines for use of antipsychotics in dementia[32]

Drug dose guidelines for use of antipsychotics in dementia antipsychotic	Starting dose
Risperidone	250 µg twice daily
Olanzapine	2.5 mg daily
Quetiapine	25 mg daily
Haloperidol	500 µg twice daily

dementias. Hence that is it essential to take specialist advice for the treatment of other BPSD I (Table 3).[31]

CONCLUSION

The most common problems in a dementia patient are behaviour problems, which require a physician's consultancy and/or hospitalization. They are multifactoral in nature; therefore, its management should also be multifaceted. First of all non-pharmacological interventions should be used for behavior system management, but if non-pharmacological interventions are not much competent then pharmacological intervention should be tried later. The use of a multidisciplinary approach is always worthy, because the root causes of behavioral problems are a mixture of organic, environmental, behavior and psychological factors. A good behavioral management system is not only valuable for a person but may also proceed to minimal change in environment and put less burden of stress on caregivers. If a differential diagnosis has been obtained once, and the behavioral problem elicited, then worked up conducted through both pharmacological and non-pharmacological interventions. In this way, both forms of intervention are important for better behavior management, but the non-pharmacological should always be the first step of the treatment program.

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