Review Article

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Understanding Depression and its Risk Factors in Elderly

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Abstract

Depression is a common psychiatric morbidity affecting all ages and genders. Elderly populations are at higher risk of developing depression. Several biological, psychological as well as social factors attribute to depression in elderly. Depression leads to significant mortality and morbidity. The quality of life and the functioning also gets grossly affected by depression. Depression is often under-diagnosed or misdiagnosed in elderly due to atypical presentation and presence of other physical co-morbidities. Hence understanding depression and its risk factors is of utmost importance for achieving better clinical outcome.

Keywords: Depression; Elderly; Risk Factors.

Introduction

Aging is a continuous and dynamic process. Aging brings a lot of changes in the bio-psycho-social dimensions of people. Individuals start compromising with their functioning, comfort as well as expectations. Vulnerability to develop physical and mental illnesses increases with aging. Depression is common in elderly population, particularly those with dementia which often leads to deterioration of quality of life, disability and impairment of cognitive abilities [1-6]. A large portion of World's population is turning gray every day, so a large proportion of the population in near future will come within the frontier of geriatric age group, a risk age for depression and dementia. Depression in elderly is usually caused by the intricate interplay of several biological, psychological as well as social factors. There are independent risk factors for geriatric depression, which can be modifiable or non-modifiable. There is a lot of overlapping between the psychopathology of dementia and geriatric depression so also between their risk factors. Nearly half of the patients suffering from dementia experience depression (syndromal or sub syndromal) during course of the disorder [7, 8]. The risk of dementia doubles in every five years after the age of 65 years. Similarly depression is also as common (20%) in elderly population [9]. The clinical manifestation of depression many a time differs from its classical presentation in other age groups [10]. In this review "geriatric depression" and "depression in elderly" is used interchangeably.

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Geriatric Depression

As per the survey by World Health Organization, the prevalence of geriatric depression is between 10 to 20 per cent across cultures [11, 12]. Depression in elderly population can present in different forms and severity (Mild depression – 4-13%, moderate to severe depression – 8-16%, dysthymia – 2%) affecting the quality of life significantly [13, 14]. Sub-syndromal depressive symptoms are more common than syndromal depressive symptoms and are often missed during under-evaluated in clinical assessment. Elderly individuals usually have difficulty in expressing about their mood and even if they express about their depressed mood, it is frequently ignored with the belief that depressive mood is a part of normal aging process. Elderly populations are more vulnerable to physical illnesses

due to series of age related biological changes in multiple organ systems. Co-existence of psychiatric illnesses further adds to the disability. Depression being the most common psychiatric co-morbidity in the geriatric population grossly affects the functioning. Cognitive dysfunction and slowness in processing are unique features of geriatric depression and present in approximately every fourth individual having major depression [15, 16]. Depression in elderly often affects multiple domains of cognition like – memory, verbal fluency, processing speed as well as visuo-spatial abilities [16].

In geriatric depression, there occurs executive dysfunction in the form of impairment of planning, organization, initiation, sequencing and shifting of attention, which in turn leads to functional disability [16, 17]. Depression in geriatric population commonly occurs if there are white matter hyper intensities in the sub-cortical brain matter which are believed to be the consequence of vascular pathologies [13]. Depression in elderly is a potential risk factor for poor social engagement [18]. Social engagement is adversely affected by factors like poor cognitive reserve, sensory impairment and impairment in the activities of daily living [18 - 20]. Table 1, below summarizes the major biological factors attributing to depression in elderly.

Table 1: Biological factors attributing to geriatric depression [21].

☞	Genetic factors
☞	Inflammation
☞	Activation of HPA (Hypothalamo - Pituitary - Adrenal) axis
☞	Hyper - cortisolaemia
☞	Hippocampal atrophy
☞	Alteration in the levels of Monoaminergic neurotransmitters
☞	Cerebrovascular disorders

Not only the biological changes attribute to depression in elderly, but also the sequel of these biological factors attribute to depression in elderly. Aging process brings changes in the form of– Loss of physical skills, Compromise in the social communication, Proneness to physical illness, increased risk to poly-pharmacy [22, 23].

Risk Factors of Depression in Elderly (Geriatric Depression)

Identifying depression and different risk factors of depression is of utmost importance. Old age per se is an important risk factor of depression. The biological, psychological as well as social changes occur with aging increasing the vulnerability for depression. There are several risk factors, which make the elderly population more vulnerable to develop depression. The major risk factors are – female gender, presence of disability, poor general health condition, physical illness – recent onset, past history of depression, negative self-image, bereavement and sleep disturbances [24]. Some factors also precipitate depression in elderly. Such precipitating risk factors of depression are: recent bereavement, migration, adverse life event, chronic ongoing stressor, social isolation and persistent sleep difficulties [25].

Abe et al; conducted a study on Japanese population to explore the difference in the risk factors of geriatric depression in rural & urban settings in 2012, which revealed that there is no gross difference in risk factors on the basis of demographic variation, however sleep disturbance in urban area, weak psychosocial support in rural area and financial constraints & unemployment in both these areas are consistent risk factors of depression in elderly [26].

With increasing age, the risk of physical illnesses increases. Aging increases the risk for cerebro-vascular disorders, Parkinson's disease, diabetes mellitus, hypertension and malignancy [27 - 29]. Depressive symptoms in physical illness in elderly population can be due to [28, 29]:

- Direct resultant of physical illness
- Disability due to physical illness
- Compromised quality of life due to disability as well as physical illness per se
- Dependence on others for own needs
- Medication induced

Medications used in elderly population for different physical illnesses in elderly also attribute to depression. Anti-hypertensives and corticosteroids are the medications, which frequently produce depressive symptoms by altering the level of catecholamines through up/down regulation, affecting the neurotransmission and metabolism of neurotransmitters [29, 30].

Depression is associated with dysregulation of the Hypothalamo-Pituitary-Adrenal (HPA) axis and hypercortisolemia, which in turn leads to hypertension and endothelial injury. This series of changes predisposes to stroke and as a post stroke effect, depression may develop. It can be said that depression leads to vascular disorder as a sequel of which vascular dementia develops and vascular dementia also increases the risk for depression [31 - 33].

Depression increases the level of inflammatory mediators in the brain which may cause neurodegenerative changes in the brain, reduces synaptic plasticity and hippocampal neurogenesis [34, 35]. Inflammatory cytokines, also hinder the metabolism of serotonin [34, 35].

Depressed patients encounter more life events in comparison to non-depressed elderly individuals [36]. Elderly individuals are at higher risk for social isolation, bereavement as well as poor psychosocial support. Lacks of psychosocial support, loneliness are potential risk factors for geriatric depression [36, 37]. Loneliness alone is a relatively weaker risk factor for geriatric depression as lonely elderly search company of people in similar circumstances and usually have friends with similar characteristics, however those with poor psychosocial support (lack of friends and other supports) are at more risk of having depression [36]. A friend or spouse can be good support for the elderly individual, hence improving the social networking should be the target of intervention in the target elderly population [36, 38, 39].

Approach, Assessment and Intervention

Rating scales are used for measuring depression in elderly population are - the geriatric Depression Scale, the Hamilton Depression Rating Scale, the Hospital Anxiety and Depression Scale and the Montgomery-Asberg Depression Rating Scale [40 - 46]. Depression in the background of dementia can be assessed by specific rating scales like Cornell Scale for Depression in Dementia.

There are few clinical trials, which used antidepressants in the treatment of geriatric depression in dementia [47, 48]. In many trials it was found that the role of antidepressants is not significantly better than placebo in geriatric depression in the background of dementia, it rather increases the side effects [49 - 51]. Most of the trials are limited to selective serotonin reuptake inhibitors only [48].

The response to antidepressants to depression in elderly is guarded if there are associated neurodegenerative disorders [47]. Despite of controversies, contradicting and conflicting evidences, many antidepressants of different groups (Selective Serotonin Reuptake Inhibitors, Tricyclic Antidepressants, Serotonin Nor-epinephrine Reuptake Inhibitors) are in use in elderly. Electroconvulsive therapy (ECT) is a safer as well as effective modality of treatment of depression in elderly [25, 52].

Elderly individuals frequently encounter anxiety during their depressive episodes, which is quite distressing for them and the antidepressant medications recommended for treatment of depression are effective enough to take care of the anxiety symptoms [55]. Sometimes the patients may need treatment augmentation with other agents. Psychosocial management is also an important dimension of therapeutic intervention [55].

Conclusion

Identifying the risk factors of depression and dementia is an important part of clinical assessment. Early identification often opens the way of early intervention. One should be aware of the risk factors of depression and dementia for screening which can often lead to an effective intervention as well as prevention [25]. Geriatric population is the vulnerable group to suffer from depression and dementia. Presence of depression or dementia alone increases the risk of development of the other. The risk factors are frequent and usually multiple in elderly population [54]. As per the available data, global population (specifically people of developed countries) is graying faster and in coming decades there will be more elderly people in the world [55]. Life expectancy of people is also increasing day by day, hence in coming years world will have more elderly individuals so also more elderly with depression. Hence understanding geriatric depression, identifying risk factors as well as planning early intervention will help in improving the quality of life of elderly.

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