

REVIEW ARTICLE

Late-life depression and rehabilitation

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Abstract

Major depression has a prevalence of 6% among the elderly, reaching 15% when minor depression is included. In clinical practice of rehabilitation, we should aware the fact that 6-15 % of the elderly are subjects of minor/ major depression who sometimes show less motivation to rehabilitation, resulting in less effective outcome from the service. We should know the characteristics of late-life depression which differs from typical depression of adults, sometimes difficult to be distinguished from dementia. It has been pointed out that late-life depression can be a risk for Alzheimer's disease and that there is depression due to vascular factors.

CHARACTERISTICS OF LATE-LIFE DEPRESSION

The mood disorders (major and minor mood disorders) are a change in mood lasting for a certain period of time, not a short emotional state. The main symptom is the persistence of depressed mood. Following depressive mood, thoughts, behaviors, and physical symptoms appear in sequence and disappear in this order when the depression recovers. In typical melancholic depression, psychomotor retardation and symptoms such as anergia, anhedonia, and abulia are often observed.

In case of late-life depression, however, we often observe rather atypical expression of symptoms. The characteristics of late-life depression are: 1. frequent physical complications, 2. significant influence from environmental and psychological factors, 3. several atypical features as described below, and 4. prone to adverse side effects of pharmacotherapy. The course

of atypical depression commonly observed in the elderly is described below (Table 1).

Agitated Depression

In some cases of the elderly, the depression of emotions and thoughts is not so noticeable, and only the feeling of impatience appears in the foreground. It should be noted that such a feeling of agitation and frustration can easily lead to suicidal attempts, and this type of depression is called agitated depression.

Masked Depression

The elderly often complains physical symptoms rather than depressive mood, and those physical complaints disappear by adequate anti-depressants treatment. For the elderly the symptom of depression can be recognized in physical symptoms as the main complaint rather than the depressive mood itself because the elderly is relatively flat in expressing their

Table 1. Specific Forms of late life depression

Sub-type	characteristics	points of attention
Agitated Dep.	agitation and anxiety	high risk of suicide, irritability
Masked Dep.	physical symptoms	delayed referral to psychiatrist
Psychotic Dep.	delusions	treatment of delusions
PseudoDementia	cognitive impairment	differentiation from dementia

feeling and mood. This type of late-life depression is named “masked depression” because the depressive symptoms are masked by physical complaints.

Hypochondriatic depression

Older people often have several physical complaints because they often have multiple comorbidities. In late-life depression, anxiety and pessimism may occur, and the physical symptoms are often exaggerated by depressive mood and thoughts, even if it is not due to a major physical illness. Indefinite complaints are often observed with hypochondriatic depression of the old people.

Pseudo-dementia

Pseudo-dementia refers to the case where depression makes it impossible to maintain daily life and is mistaken as dementia. At a glance a pseudo-dementia patient shows symptoms indistinguishable from dementia, dependence of ADL to others, not remembering important things like the date and day of the week, the contents of breakfast, and not knowing what to do properly in living conditions. The interesting point of the patient is that the patients show unexpectedly high scores in dementia screening tests such as Mini-Mental State Examination (MMSE) or Hasegawa Dementia Scale Revised (HDSR). Considering the impairment observed in his (her) life, relatively better results in simple screening test of memory function indicate a possibility of pseudo-dementia. The activity of daily life of late life depression patients is disturbed due to the loss of interest or spontaneity even though the memory function is maintained. We should keep in mind that there is a case their daily life is significantly disturbed due to the type of depression.

It should be also remembered that depression can be an early symptom of Alzheimer’s disease. In early stage of some Alzheimer’s disease patients, before symptoms of dementia are observed, the symptoms of depression are predominant. Then the symptoms of dementia gradually become more prominent later. In fact, about 40% (50% in some studies) of people with dementia have depression.

Delusional Depression

Depression in the elderly can easily develop into delusions. The three major delusions of late-life depression are sinfulness, poverty, and hypochondriasis. Delusions often develop in the elderly, and in extreme cases, nihilistic delusions may present in the foreground as Cotard syndrome.

FACTORS CAUSING DEPRESSION IN THE ELDERLY

The elderly experiences various kinds of losses in their lives, such as loss of health (decline in physical function), loss of social life (loss of social role due to retirement or child independence), financial loss (decrease in income), loss of relationships (loss of spouse, and family members). Those loss experiences often observed with elderly life can trigger late-life depression. It should also be noted that we see many elderly people lose their energy, and we sometimes do not tend to think they are actually ill (Parker, 2007).

POST-STROKE DEPRESSION AND VASCULAR DEPRESSION

Depression may occur after a stroke episode, which is called post-stroke depression. The prevalence of post-stroke depression varies from 25% to 79%, depending on patient’s characteristics, stroke region in the brain, time course of stroke episode, method of evaluation, exclusion criteria, etc. Prevalence rate is reported 19.3% for major depression and 18.5% for minor depression among stroke patients (Morris, 1990). There have been various discussions about the pathogenic mechanism of post-stroke depression from neurobiological to psychosocial viewpoints.

Stroke patients show more depression than orthopedic patients, though both types of patients are immobilized to the same degree (Folstein, 1977). Stroke patients due to carotid artery stenosis show depression more commonly than patients with peripheral vascular disorders (Rao, 2001). The frequency of depression is similar between stroke and myocardial infarction patients (Aben, 2003). Therefore, it is now thought that depression will be developed by a factor common to both stroke and myocardial infarction as “systemic vascular factor” (Figure 1).

The late-life depression is characterized with more severe cognitive impairment, more ischemic lesions in the brain, lower living function, lower family accumulation, and less personality deviation involved than the early-onset depression. White matter lesions (T2 enhancement on MRI) in striatum-frontal lobe and white matter hyperintensity (WMH) in periventricular area are often characteristically observed in late-life depressed patients. It is also known that depression patients with white matter lesions (WMH) on brain imaging are resistant to anti-depressant treatment, and those patients’

cognitive function is likely to remain impaired after anti-depressant treatment. It has been known that recurrence is higher and easily shifting to chronic depression with late-life depression showing more WNH. Based on these findings, the concept of vascular depression is proposed (Krishnan, 1995; Alexopoulos, 1997) to understand the pathogenesis of depression with leukoaraiosis and deep gray matter (cerebral basal nucleus) lesions by MRI observation. The appearance of small infarct lesions in the cerebrum, including asymptomatic ones, can cause depression, and it is understood that late-life depression can be caused by arteriosclerosis (Figure 2). Late-life depression is due to a dysfunction of the

white matter that connects the striatum to the frontal lobe, and this circuit is believed to be responsible for mood and cognitive impairment (O'Brien, 2003).

There might be vicious cycles between physical and mental disorders due to vascular factors. Vascular factors cause cerebral infarction and/or myocardial infarction as physical symptoms, and these physical diseases in turn pose a risk of vascular depression, and depression further causes myocardial infarction/ cerebral infarction. Therefore, physical symptoms and mental symptoms accelerate the pathological process of physical and mental impairment leading to the final outcome (Figure 3).

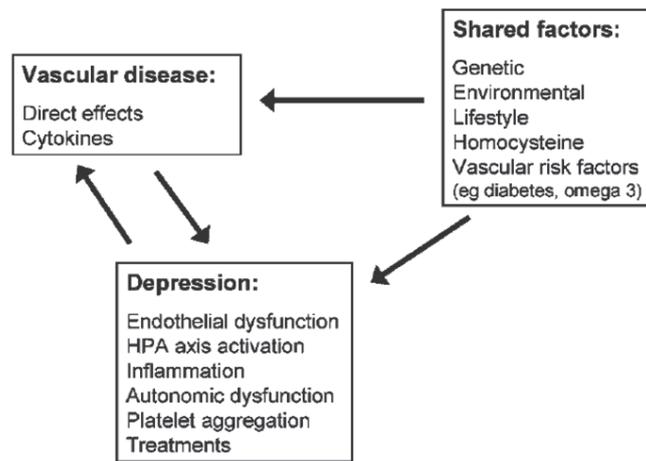


Figure 1. Putative underlying mechanisms explaining the relationship between vascular disease and depression.

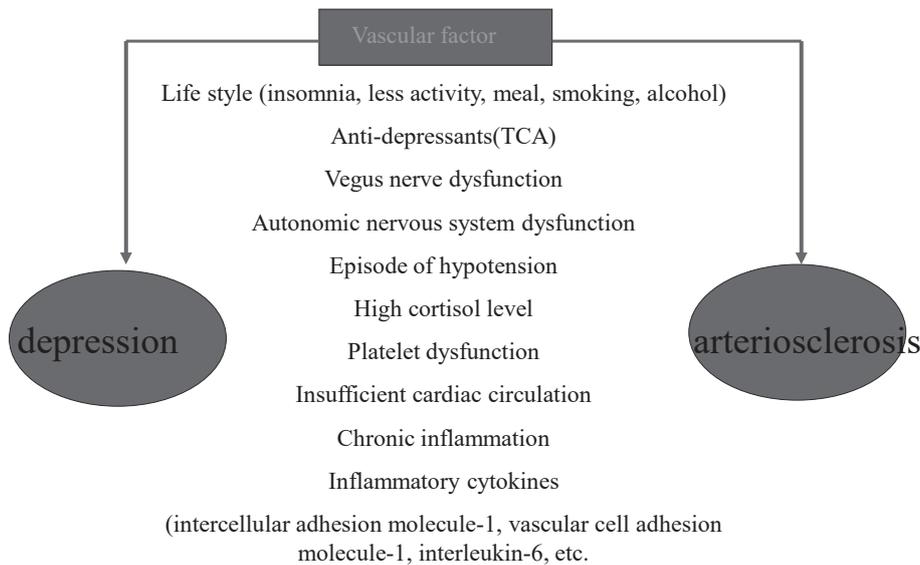


Figure 2. vascular factors causing depression and arteriosclerosis

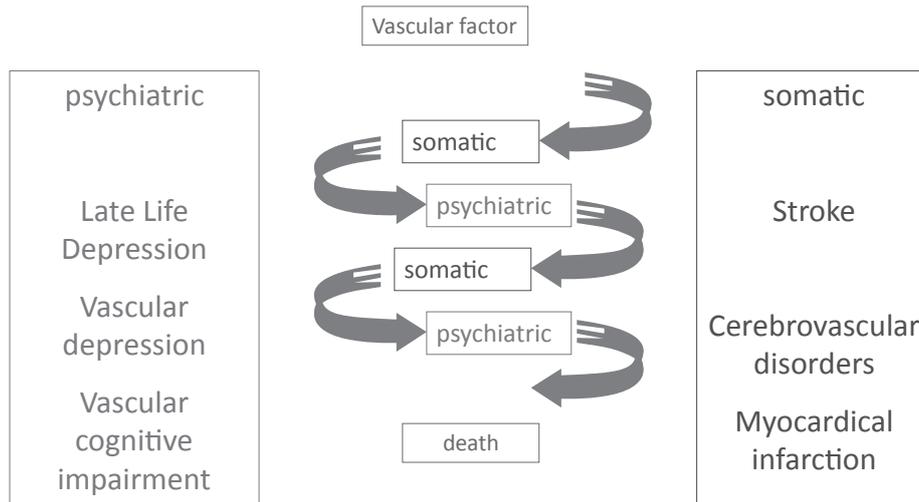


Figure 3. Vicious Cycle between psychiatric and somatic disorders

TREATMENT OF LATE-LIFE DEPRESSION

Antidepressants are mainly used to treat depression. Until now, treatment with tricyclic antidepressants tends to cause adverse side effects in the elderly, and in many cases the drug cannot be used sufficiently. Recently, Serotonin Specific Reuptake Inhibitors (SSRI), Serotonin Noradrenergic Reuptake Inhibitor (SNRI), and Noradrenergic and Specific Serotonergic Antidepressant (NaSSA) have been introduced to the treatment of depression with less adverse side effects. These antidepressants can be safely used for the treatment of late-life depression.

Electroconvulsive therapy (ECT) is also administered when risk of suicide is imminent or the patient is treatment-resistant to pharmacotherapy. In these days, ECT was replaced by modified electroconvulsive therapy (mECT) which is given under anesthesiology control at a well-equipped medical institution without inducing actual convulsions. It is well documented that late-life depression patients have more benefit than anti-depressant treatment in case of treatment resistant depression. Repeated transcranial magnetic stimulation (rTMS) is also used for late-life depression. In recent years, near-infrared spectroscopy (NIRS) for depression has come to be used as an aid in diagnosing depression. In depressed patients, the diagnosis of depression is attempted by utilizing the fact that the increase in oxyhemoglobin level due to NIRS during the frontal lobe task is suppressed as compared with the normal pattern.

SUPPORTING LATE-LIFE DEPRESSED PATIENTS

We should do our best not to overlook late-life depression among the elderly. Depression is common among the elderly because they have more chance of experiencing the loss in their life as mentioned above. We should pay attention of a little changes in behaviors of the elderly. When we hear from the elderly something like “My friend passed away and I don’t feel well” or “I’m sick and I am not willing to go out,” we should think of a possibility of the late-life depression. While carefully discussing the lonely feeling of losing a friend, the pain in the body, the anxiety in daily life, etc., consultation to psychiatrists can be a better choice, instead of giving a diagnosis of late-life depression.

In general, it is a rule of depression to take a good rest and not to stand firm. In addition to it, individualized care for physical symptoms and support for life are important in case of late-life depression. Psychological support from the surrounding people will give the late-life depression patients a sense of security to lead to sooner recovery.

REHABILITATION TO LATE-LIFE DEPRESSION

Rehabilitation service for the elderly can play an important role to maintain their daily functions. Rehabilitation professionals including physical therapists, occupational therapists, speech/auditory therapists are expected to improve the quality of life by preventing

deterioration of physical, mental, and social functions due to aging. In actual clinical settings, rehabilitation for late-life depressed patients often faces difficulties because elderly depressed subjects are usually not willing to work on rehabilitation service. Some tips for effective rehabilitation service for late-life depressed patients are discussed below.

To late-life depressed subjects, introduction of rehabilitation is the most difficult and important. Late-life depressed patients usually show lower motivation to intervention because they have less expectation to the effectiveness of rehabilitation because of their poor understanding on the development of rehabilitation methods. Due to depressive symptoms, their way of thinking tends to be more pessimistic, and they tend to think their complaints can never be restored, and they think their difficulties are not reduced by any means. The most important thing for the service givers is how to introduce the adequate rehabilitation service with the hope of getting better in their functioning. It is often useful to explain that most patients of late-life depression tend to think their dysfunction is never to be restored, but it is not the case. There are many late-life depression patients whose symptoms have been successfully recovered by the service of rehabilitation.

In actual setting of rehabilitation, late-life depressed patients sometimes have difficulty in understanding instructions in rehabilitation service due to decline in visual, auditory, and other perception. When rehabilitation service is implemented to the elderly subjects, the instruction should be given as clearly as possible, with loud voice, one by one instruction without ambiguity.

Late-life depressed patients sometimes overreact to physical stress due to increased anxiety and lowered threshold to pain. The rehabilitation specialist should pay attention to the level of anxiety of the subject and try to increase the load to the subjects slowly and steadily after confirming the patient's response.

Late-life depressed patients tend to focus on trivial matters and easily develop delusional interpretation. The capacity of accepting possible load of rehabili-

tation is sometimes much lower than that expected to non-depressive subjects. Rehabilitation specialists should aware the fact that late-life depressed subjects easily develop delusional reaction if the load is too much for the subjects.

To avoid rejection to the rehabilitation service by late-life depression patients, the tip will be the choice of means of rehabilitation which fits to the individual preference. Rehabilitation service should be individualized to gain the maximum outcome, and this point is particularly important for the service to the late-life depressed patients.

Late-life depressed patients are seeking help and support in physical as well as mental aspects. Rehabilitation specialists facing late-life depression patients should behave properly supporting those with dysfunction and instability of mood and volition.

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