Alzheimer's Disease Care, Treatment and Follow-up

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Summary
Alzheimer's disease (AD) is the most frequently encountered cause of dementia almost in every society and its primary cause is not completely known. It is a great burden to patients and caregivers. The history given by families and caregivers beside the patient is very important in order to obtain a detailed history. Several neuropsychological tests can be used for diagnosis and screening of AD. Biochemical analyses must also be carried out for diagnosis. Biochemical blood tests reveal an increase in acetycholinesterase enzyme activity and decrease in acetycholine levels. Acetycholine esterase inhibitors are used for treatment. Antagonist of N-Metil-D-aspartat can also be used to prevent glutamnergic excitotoxicity in advanced disease. Even though there is no definite treatment for AD, the major aim of the treatment is to preserve daily life activities and delay dependence to caregivers. Different psychological and behavioral changes in the patient can be seen. The management of the illness necessitates an interdisciplinary approach. In this study, we aimed to discuss the principles of follow-up, treatment options and care of AD.

Key words: Alzheimer disease, dementia, diagnosis, treatment

Alzheimer Hastalığı Bakımı, Tedavisi ve İzlemi

Özet


AH’i en iyi şekilde gidermek için, uykuyuz kalanlı arayış, uykudaki disiplinler, anksiyete, vücütに対する davanışlar, umutsuzluk, depressyonuna bu faktörlere ve davranışsal ciddi çıkıklıkların görülüllüğünü, Alzheimer hastasının b叟 sul işlevinin sürdürülmesine yardım etmek, fiziksel güvenliğine sağlamak, anksiyete ve aşırı ağrılığına azaltmak, ihtiyaçlara uyum sağlamak, bağımlılığını ve bu bakım aktivitelerini desteklemek, sosyalizasyon gesturelerini carşamak, yeteri basınlınlığı sağlamak, uykuyu bozukluklarını gidermek, aileye destek olmak ve eğitme bakımı temel konulardır.
AH'da bakım verilerin büyük bir kısmını eşleri, çocukları AH'da bakım verilerin büyük bir kısmını eşleri, çocukları kütülegen bir seyir izlediği için hastada oluşturduğu sorunların yanı sıra bakım verilerinde de büyük yük getirebilmektedir. Hasta ve hasta yakınları hastalığa ilgili bıçaklar da yada ulusal düzeydeki dernek yada kurulmuşlar sorunların paylaşımları ve destek alımı açısından önlenirilebilir.

**Anahtar kelimeler:** Alzheimer hastalığı, demans, tanı, tedavi.

**Introduction**

It is a well known fact that world population is aging gradually around the world. The number of elderly AH'da bakım verilerin büyük bir kısmını eşleri, çocukları increasing. In relation to this change, elderly care and needs of elderly population is getting more important in medicine. Multidisciplinary approach should be adopted for care of the geriatric age group who may need more visits and medical care compared to other age groups. Medical and social problems of the fragile elderly should be held by a specialized geriatric team. Geriatric team should include geriatrists or family physicians, nurses and social welfare specialists.

Alzheimer’s disease (AD) is a great burden to the patients and caregivers. AD like other chronic diseases cannot be completely cured. However, using efficient AH'da bakım verilerin büyük bir kısmını eşleri, çocukları constructive influence on the quality of life. In this study, we aimed to discuss the principles of follow-up, treatment options and care principles of Alzheimer disease.

**Pathology, Diagnosis and Risk Factors**

Dementia is the most frequently encountered disease in the majority of elderly population over age 80 manifesting itself by the loss of memory and affects. It is reported that 56.2% of patients living in nursery homes have diagnosis with dementia, which is the second most commonly diagnosed disease following hypertension. AD is the most frequently encountered cause of dementia almost in every society and its primary cause is not completely known. Alzheimer’s disease is first diagnosed by a German neurologist Dr. Alois Alzheimer in 1901. Senile plaques are the primary pathologic indicators which are the accumulation of abnormal protein materials and cellular elements. Neurofibrillary tangles are defined as the intracellular abnormal fiber accumulations. These findings were established by autopsy investigations. However, while AH'da bakım verilerin büyük bir kısmını eşleri, çocukları disease, some advanced techniques and investigations should also be carried out.

Risk factors of AD have been discussed extensively. Findings of several risk factors are rather weak and contradictory. Known risk factors include history of dementia, aging, specific mutations on the 1st, 14th and 21st chromosomes, Apolipoprotein E e4 genotype and Down syndromes. The most probable risk factors are female gender, low level of education, damage in the brain and depression. Early diagnosis of the disease in primary care is very important for an efficient follow-up and treatment. Symptoms of AD show progression in clinic activities.

Early symptoms although generally hidden exist long before the patients consult doctors. At this period the patients often consult doctors for some other health problems. A detailed history should be taken from every elderly who are among the higher risk group. Although it is an important disease leading to the loss of memory, AH'da bakım verilerin büyük bir kısmını eşleri, çocukları patients is very important in order to obtain a detailed background. The management of the illness necessitates an interdisciplinary approach. Family physicians who are suitable for close follow-up can easily be reached and may provide coordination between patient, family, other disciplines and social welfare. Patients should be oriented to neurology or psychiatry particularly in the progressive AH'da bakım verilerin büyük bir kısmını eşleri, çocukları symptoms. Progression of AD is shown in Table 1.


Several neuropsychological tests such as Mini-Mental State Examination (MMSE) and “clocktick” may be used for diagnosis and screening of AD. In addition wide routine biochemical analyses must be carried out including B 12, folic acid, test of thyroid functions, parathormone, test of syphilis, electrolytes for diagnosis. Brain tomography and brain magnetic resonance findings can be useful for follow-up. Biochemical blood tests reveal an increase in acetylcholinesterase enzyme activity and decrease in acetylcholine levels. Increase of acetylcholine level should be provided basically for diagnosis.

### Table 1. Stages of Alzheimer Disease

<table>
<thead>
<tr>
<th>Early</th>
<th>Progressive</th>
<th>Advanced</th>
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</thead>
<tbody>
<tr>
<td>Short term memory loss</td>
<td>No new information</td>
<td>Short and long term memory is completely lost</td>
</tr>
<tr>
<td>Simple and strange amnesia</td>
<td>Long term memory loss begins</td>
<td>Urinary and fecal incontinence</td>
</tr>
<tr>
<td>Loss of self confidence</td>
<td>She/he needs help for essential functions</td>
<td>She/he can not perform essential functions</td>
</tr>
<tr>
<td>Hostility</td>
<td>Behavioral disinorganization</td>
<td>Contractors develop in extremities</td>
</tr>
<tr>
<td>Agitation</td>
<td>Agitation</td>
<td>Primitive reflexes,</td>
</tr>
<tr>
<td>Emotional liability hereity continues</td>
<td>Hostility</td>
<td>Grand mal bouts are observed</td>
</tr>
<tr>
<td>Physical aggressiveness</td>
<td></td>
<td>Deaths due to infections</td>
</tr>
</tbody>
</table>
Treatment

Acetylcholine esterase inhibitors (AChEIs), “Donepezil”, “Rivastigmine” and “Galantamine” are used for treatment. In the advanced stage, an antagonist of N-Methyl-D-aspartate (NMDA) memantin can also be used to prevent glutaminergic excitotoxicity6,11,13,14. Pharmaceutical properties of the drugs used for the treatment of dementia are shown in Table 214.

The drugs should be given in low doses at the beginning since several side effects can occur in the elderly. Close follow-up and the possible side effects of the drugs should be taken into consideration by the geriatric team. It is well known that medication cannot repair already damaged neurons. However, slight but definite improvements can be achieved in attentiveness, apathy and speaking. It is also known that drug treatment cannot compensate the elapsed time and definitely recover the memory. The treatment preserves daily life functions and delays dependence to caregiver. Antipsychotics, anxiolytics and antidepressants that are used in case of behavioral disorder, decrease the burden of caregivers, but should only be used when it is nesessary and in dosages prescribed by the doctors7,9,11,14.

For all AChEi drugs used in AD treatment, the increase in dosage increases the side effects. Among the most frequently encountered side effects are dyspepsia, sicchasia, vomiting, diarrhea, muscle cramps, fatigue, bradycardia, senkopt and facial fever. Drugs shown on table 2 are new generation AChEI which provide high level “cholinesterase inhibition” and cause less side effects11,13,14.

Principles of Care For Alzheimer’s Disease

Eventhough there is no definite treatment for AD, it is important for patients to continue their daily life activities actively as much as possible. In addition it is necessary for the professional health team to become specialized about management of dementia. International AD association has determined certain principles about the management and care of the dementia patients especially for the nurses. These are as follows:

Principle 1: The diagnosis of dementia/Alzheimer disease and removal of the negative effects by educational programs should be carried out.

Principle 2: Multidisciplinary approach must be adopted for respect and lasting appreciation as a human being.

Principle 3: To create a safe environment for dementia patient far from abusing.

Principle 4: To provide social support, treatment and caring principles for dementia patient and for those who are under risk.

Principle 5: In addition to family education, it is also essential to form family support groups to solve problems related to daily life activities.

Principle 6: Assessment of needs of dementia patients and family members

Principle 7: Training the caregiver professionals is necessary concerning the effects of dementia, and how to provide care to dementia patients25.

Management of dementia patients are an important process of nursing17. The aim of nursing efforts is to help

<table>
<thead>
<tr>
<th>Table 2. Pharmaceutical properties of drugs used in dementia14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
</tr>
<tr>
<td>Time elapsed until max</td>
</tr>
<tr>
<td>serum concentration (hour)</td>
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<tr>
<td>Interaction with food in</td>
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<tr>
<td>absorption</td>
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<tr>
<td>Half-life for Serum (hour)</td>
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<tr>
<td>Binding to protein (%)</td>
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Alzheimer’s patient may be confused, wander around at home or institution at night assuming as daytime. The patient should be encouraged to be awake during the day to improve quality of night sleep and various techniques to help night sleep may also be helpful. Changes in the order of activities may be seen with the progression of Alzheimer’s disease. Insufficient activities, hyperactivity, prolonged and aimless wanderings, repeated movements are common in progressive Alzheimer's disease. Evaluation of the activity level of patient and to form a special daily activity plan for twenty four hours may help in organization.

It is necessary to take the appropriate safety measurements in an institution. Anxiety can be eliminated by providing a calm environment and decreasing sensor stimulation and hasty behavior. Patients suffering from memory loss can benefit from supported social life. The evaluation of the patient's surrounding to eliminate physical risks may help to increase his/her independence. It is necessary to remove all dangerous things which may cause trauma such as removal of carpets, use of inflammable mattresses, rearranging bars in the bathroom and if there is difficulty in walking, some auxiliary items can be used as well.

Alzheimer’s patients must be encouraged to be in the community and a special effort is needed as the disease progresses. Speaking to the patient should be performed slowly and using simple sentences with well pronunciation may help to ease communication. Special effort may be needed to overcome patient's anxiety. As AD progresses, different psychology and behavioral changes in patients can be seen. Among these, the most frequently observed ones are wandering, anxiety and aggressive behavior, hopefulness, depression, hallucinations and excessive reactions. In these situations, geriatric nurse with the help of family can evaluate possible strategies in order to make a secure and calm surrounding without any trace of threatening. In a fear and anxiety can be relieved with giving detailed and calm explanations by mimics.

Patient should be provided to receive the right medicine at the right time with a right dosage. Drugs should be kept in a locked cupboard to prevent the usage of excessive dosage. Some patients may refuse to take medicines, if this is the case it is better to seek the ways in which they can be convinced and avoid tense and stubborn approach. We should be sure that the patient had taken the medicine and the mouth should be checked if necessary.

Most of the caregivers are spouse, children or other family members. Since the illness is chronic and having a continuously worsening trend, people who are taking care of the patients are at a great risk of burden due to responsibilities. Caregivers of Alzheimer’s patients may be referred to associations or institutions related with the illness at regional or national levels. Associations such as Alzheimer association can be helpful to overcome the problems encountered by activities such as supporting group therapies and subsidiary exchange of information.

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