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 acetylcholinesteraz enzyme activity and decrease in acetylcholine levels. Acetylcholine esterase inhibitors are used for treatment. Antagonist of N-Metil-D-aspartat can also be used to prevent glutaminergic excitotoxicity in advanced disease. Evenyhough there is no definite treatment for AD, the major aim of the treatment is to preserve daily life activities and delay dependence to caregiver. 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

Demans yaşlıda bilişsel fonksiyon kaybı ile seyreden hastalıklardan en sık görülenidir. Alzheimer Hastalığı (AH) ise genel olarak günümüzde hemen tüm toplumlarda demansın en sık görülen tipi olup, primer nedeni tam olarak bilinmemektedir. AH kronik bir hastalıktır ve güncel tedavilerin etkin kullanımı, iyi bir hasta izlemi ile bakımının yapılması yaşam süresi ve kalitesine olumlu etki yapmaktadır. Mümkün olan en erken evrede AH'nın tanınması ve izleminde aile hekimleri büyük rol oynayabilirler. Aile hekimi hasta, aile, diğer disiplinler ve sosyal hizmetler arasında koordinasyonu da sağlayabilecek bir konumdadır. Bu yazıda interdisipliner ekip yaklaşımıyla Alzheimer hastasının izlemi, tedavisi ve bakım ilkeleri konusu ele alınmaya çalışılmıştır.

AH tanısının konulması için öncelikli olarak hastanın yanı sıra ailelerden ve bakım verenlerden ayrıntılı bir öykü alınmalıdır. Tanı ve tarama amaçlı olarak başta Mini-Mental Durum Muayenesi (MMSE), saat çizme olmak üzere birçok noropsikolojik test kullanılabilmektedir. Ayrıca hastanın ayırıcı tanı açısından değerlendirilmesinde B12, folik asit, tiroid fonksiyon testleri, parathormon, sifilis testleri, elektrolitler dahil geniş rutin biyokimyasal analizler yapılmalıdır. Alan uzmanları tarafından kranial tomografi ve kranial manyetik rezonans görüntüleme gibi ileri tetkikler yapılabilir.

Hastalığın patogenezine bakıldığında asetilkolinesteraz enzim aktivitesinde artış ve asetil kolin düzeyinde düşme görülmektedir. Temel olarak tedavide asetil kolin düzeylerinin yükseltilmesi amacıyla asetil kolin esteraz inhibitörleri Donepezil, Rivastigmin ve Galantamin kullanılmaktadır. İlerleyen dönemde glutaminerjik eksitotoksiteyi önleyen N-Metil-D-aspartat antagonisti Memantin de kullanılabilir. Bu ilaçlar ile belleğin belirgin bir şekilde yerine gelemediği bilinmektedir. Ancak dikkat, apati ve konuşmalarda hafif ama belirgin iyileşmeler gözlenebilir. Davranışsal sorunların giderilmesinde ve bakım yükünün azaltılmasında da etkili olabilirler. Ayrıca antipsikotikler, anksiyolitikler ile antidepresanlar, gerekli durumlarda ve uygun dozlarda tedavide kullanılabilirler. Bu tedavilerdeki temel amacın yaşam fonksiyonlarının korunması ile gerilemenin ya da bağımlılık durumunun geciktirilmesi olduğu bilinmelidir. AH'nın kesin bir tedavisi olmadığı için hastanın yaşamını mümkün olan en aktif ve kaliteli şekilde sürdürmesi hastanın bakımı açısından önem taşımaktadır. Bu nedenle bakım veren profesyonel sağlık ekibinin bu konuda özelleşmiş olması gerekmektedir.

AH ilerledikçe amaçsız dolaşmalar, uyku düzensizlikleri anksiyete, saldırgan davranışlar, umutsuzluk, depresyon, halüsinasyonlar gibi farklı ruhsal ve davranışsal değişiklikler görülebilmektedir. Alzheimer hastasının bilişsel işlevini sürdürmesine yardım etmek, fiziksel güvenliğini sağlamak, anksiyete ve ajitasyonunu azaltmak, iletişimi iyileştirmek, bağımsızlığını ve öz bakım aktivitelerini desteklemek, sosyalizasyon gereksinimlerini karşılamak, yeterli beslenmeyi sağlamak, uyku bozukluklarını gidermek, aileye destek olmak ve eğitmek bakımın temel konularıdır.

AH'da bakım verenlerin büyük bir kısmı eşleri, çocukları AH'da bakım verenlerin büyük bir kısmı eşleri, çocukları kötüleşen bir seyir izlediği için hastada oluşturduğu sorunların yanı sıra bakım verenlere de büyük yük getirebilmektedir. Hasta ve hasta yakınları hastalıkla ilgili bölgesel ya da ulusal düzeydeki dernek ya da kuruluşlara sorunların paylaşımı ve destek alımı açısından yönlendirilebilir.

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

Introduction

It is a well known fact that world population is aging gradually around the world[1-3]. The number of elderly AH'da bakım verenlerin büyük bir kısmı eşleri, çocukları increasing[2,4]. 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 groups5,6. 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[7,8].

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 verenlerin büyük bir kısmı 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[9,10].

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[10,11]. 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[12]. AD is the most frequently encountered cause of dementia almost in every society and its primary cause is not completely known. Alzheimers' 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. Neurofibril glomeruli are defined as the intracellular abnormal fiber accumulations. These findings were established by autopsy investigations. However, while AH'da bakım verenlerin büyük bir kısmı eşleri, çocukları disease, some advanced techniques and investigations should also be carried out[11,13].

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, Apolipoproptein E **e**-4 genotype and Down syndromes. The most probable risk factors are female gender, low level of education, damage in the brain and depression[11,13,14]. 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 verenlerin büyük bir kısmı eşleri, çocukları AH'da bakım verenlerin büyük bir kısmı 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 verenlerin büyük bir kısmı eşleri, çocukları symptoms[9, 10, 15]. Progression of AD is shown in Table 1*.

Dişçigil G, Tekin N. Neuropsychiatric diseases. In 'Geriatric Book for Family Physicians' (Aile Hekimleri İçin Geriatri El Kitabı) Aydın, Adnan Menderes Üniversitesi Yayınları, 2007; 44.

Several neuropsychological tests such as Mini-Mental State Examination (MMSE) and "clock tick" 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 [10,11]. Biochemical blood tests reveal an increase in acetylcholinesteraz enzyme activity and decrease in acetylcholine levels. Increase of acetylcholine level should be provided basically for diagnosis.

Table1. Stages of Alzheimer Disease

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

Treatment

Acetylcholine esterase inhibitors (AChEI), "Donepezil", "Rivastigmine" and "Galatamine" are used for treatment. In the advanced stage, an antagonist of N-Metil-D-aspartat (NMDA) memantin can also be used to prevent glutaminergic excitotoxicity[9,11,13,14]. Pharmaceutical properties of the drugs used for the treatment of dementia are shown in Table 2 [14].

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 nessessary and in dosages prescribed by the doctors[7,9-11,14].

Table 2. Pharmaceutical properties of drugs used in dementia14

Properties	Donepezil	Rivastigmin	Galantamin	Memantin
Time elapsed until max serum concentration (hour)	3-5	0.5-2	0,5-1	3-7
Interaction with food in absorption	No	Yes	Yes	No
Half-life for Serum (hour)	70-80	2	5-7	60-80
Binding to protein (%)	96	40	0-20	45

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, senkop and facial fever. Drugs shown on table 2 are new generation AChEI which provide high level "cholinesterase inhibition" and cause less side effects [11,13,14].

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 patients[25].

Management of dementia patients are an important process of nursing[17]. The aim of nursing efforts is to help for an optimal and sustainable acquaintance, to provide necessary nutrition and physical security, to decrease anxiety and agitation, , to support continuation of communication, self caring and independence, to provide appropriate surrounding for socialization, to manage sleep disorders and to support and train the family[18-22]. Nursing services should allow elderly to carry out daily activities as much as possible and support family and care providers[19]. Several nutritional problems are encountered in Alzheimers' patients. Alzheimers' patients should be encouraged to feed themselves. Every meal should be served on regular bases, at the same time and at the same place. In the advanced stage of dementia, if the patient is being fed enterally, nursing care is very important in this respect to avoid the risk of aspiration[17,22,23] and when patient can no longer do necessary daily activities, special care may be necessary in case of bed sores[17,22,23].

Lack of ability of urine and fecal continence; incontinence can particularly be inconvient during night. In addition problems such as inability to find the bathroom or defecation on improper places may also happen. Placing a picture of a toilet on the bathroom door may help the

patient. Guiding the patient to the bathroom with a certain time interval (more often at nights) or use of a bed-pan, may help to extend the time intervals between urination and intestinal discharge which may help to avoid trauma at night due to transfer. It is important to take necessary measurement to protect elderly from trauma such as removing side barriers of bed[17-19,22,23].

Alzheimers' 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[17,23]. Changes in the order of activities may be seen with the progression of Alzheimers' disease. Insufficient activities, hyperactivity, prolonged and aimless wanderings, repeated movements are common in progressive Alzheimers' 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[17, 19]. Anxiety can be eliminated by providing a calm environment and decreasing sensory stimulants and hasty behavior. Patients suffering from memory loss can benefit from supported social life[18,19,21]. 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[17,22, 23].

Alzheimers' 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[17, 19]. 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[17,19,23].

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[17,23].

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[18-21]. Caregivers of Alzheimers' 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[18, 19, 21].

References

1- Smith T. European health challenges. BMJ 1991;303:1395-1397.
2- Akgün S, Bakar C, Budakoğlu II: Trends of elderly population in the world and Turkey: Problems and Recomodations. Turk J Geriatrics 2004;7(2):105-110.
3- Türkiye İstatistik Kurumu.=&report =turkiye_yasgr. RDF&desformat=html&ENVID=adnksEnv. adresinden ulaşılmıştır.
4- Türkiye'de Yaşlıların Durumu ve Yaşlanma Ulusal Eylem Planı. adresinden ulaşılmıştır.
5- Kutsal GY. Yaşlanan dünya, yaşlanan toplum, yaşlanan insan. Hacettepe Toplum Hekimliği Bülteni 2003;24:1-6.
6- Kane R.L. Geriatrics as a paradigm for good chronic care. Age and Ageing 2002;31:331-332.
7- Hyer K. Geriatric interdisciplinary teams. In "The Merck Manuel of Geriatrics" (eds) Beers MH, Berkow R. NJ,USA, Merck&Co.,Inc. 2000;74-77.
8- Tekin N, Şahin HA. Birinci basamak hekimlerinin geriatrik hasta izlemindeki yeri: Geriatrik bakım merkezi örnekleri. Sendrom Dergisi 2006;18(11):61-64.
9- Dişçigil G, Tekin N. Aile Hekimleri İçin Geriatri El Kitabı. Aydın, Adnan Menderes Üniversitesi Yayınları, 2007.
10- Curan S, Wattis JP. "Practical Management of Dementia a multi-professional approach". United Kingdom, Radcliffe Medical Press Ltd Oxon, 2007.
11- Geldmacher D. "Alzheimer Demansının Güncel Tanı ve Tedavisi". Çeviren Bakar M, Erkol G. Danışmanlık Eğitim Organizasyon, Istanbul 2004.
12- Tekin N, Baskan M, Yunus A, Aybar O. Evaluation of Geriatric Patients in Narlıdere-Izmir Geriatric Care Center, Poster Presentation, Geriatrics İstanbul 2006.
13- Arıoğul S. "Geriatri ve Gerontoloji". Ankara, MN Medical & Nobel. 2006.
14- Cummings JL. Alzheimer Disease. NEJM 2004; 351: 56-67.
15- Santacruz K, Swagerty D. Early diagnosis of dementia. Am Fam Physician 2001;63(4):703-717.
16- Beck CK, Shue VM. Interventions for treating distruptive behavior in demented elderly people. Nurs Clin North Am 1994;29:143-155.
17- Fadıloğlu Ç, Özer S, Kumral E. "Alzheimer Hastalığında Bakım İlkeleri". İstanbul, Form Reklam Hizmetleri. 2004.
18- Ignatavacius DD, Workman ML. "Medical Surgical Nursing". 2nd ed. Philadelphia, WB Saunders Company. 1995;1153-1167.
19- Küçükgüçlü Ö. Alzheimer Hastalığı ve Hemşirelik Bakımı. Demans Dergisi 2003;3:86-92.
20- Le Mone P, Burke KM. Medical Surgical Nursing. California, Menlo Park. 1996;1804-1813.
21- Ozuna J. Nursing Care of Clients with Degenerative Neurologic Disorders. In "Medical Surgical Nursing". (eds) JM Black, JE Matassari. Philadelphia, WB Saunders Company, 1997;863-872.
22- Practical Nursing Care for People with Alzheimer's Disease. adresinden 10 Mart 2009 tarihinde erişilmiştir.
23- Bakım İçin Öneriler.http:www.alz.org.tr/portal/alias-alz.org/lang_tr_TR/tab/D-3806/Desktop Default.aspx. Erişim adresinden 10 Mart 2009 tarihinde erişilmiştir.
24- Alzheimer's Disease. http://yourtotalhealth.ivillage.com/alzheimers-disease.html adresinden 11.03.20079 tarihinde erişilmiştir.
25- Aşti N.Yaşam Dönemlerinde Psikiyatri Paneli: Demanslı Hastalar ve Psikiyatri Hemşireliği. 2. Ulusal Psikiyatri Hemşireliği Günleri, 28-30 Nisan 2008. İstanbul, Sempozyum Özet Kitabı, 2009;16.