



Alzheimer's disease and its Management in Unani System of Medicine

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ABSTRACT

Alzheimer's disease is the most common form of dementia; it is a syndrome in which there is deterioration in thinking, memory, behavior and the ability to perform everyday activities. Brain cell connections and the cells themselves degenerate and die which eventually destroy the memory and other important mental functions. According to WHO, 50 million people around the world have dementia and there are nearly 10 million new cases every year. Genetic factors play an important role and about 15% of cases are familial age is the strongest risk factor. In the Unani system of medicine there is no direct reference to this disorder but Alzheimer's disease is almost associated with Nisyan or fasad-e-takhayyu'l or dimag ki kharabi. Etiology according to unani system of medicine is that it is due to viscid phlegm (Balgam Ghaleez) and excess moistness (Rutoobath) in brain. Unani system of medicine is endeavoured with enormous single and compound drugs with least side effects which can enhance the condition. Unani drugs with actions like Muhaffizat, muslihaat, Muqqawiat, Moadilath and Munish-e-hararath-e-ghariziya are preferred.

1. INTRODUCTION

The term Alzheimer's was first coined by German psychiatrist Dr. Alois Alzheimer in 1906. Alzheimer's disease is a chronic neurodegenerative disease that usually starts slowly and gradually worsens over time. The most common early symptom is difficulty in remembering recent events. As the disease advances symptoms can include with problems with language disorientation, mood swings, and loss of motivation, not managing self-care and behavioral issues. As a patient's condition declines, they often withdraw from family and society. According to WHO, AD is the most common form of dementia. There are no available treatments that stop or reverse the progression of the disease, which worsens as it progresses and eventually leads to death (Fatima *et al.*, 2017). The symptom of disease can first appear after age 60 and the risk increases with age. Younger people may get AD but it is less common. The number of people living with the disease doubles every 5 years beyond age 65.

In classical unani literature there is no direct mention about AD but it is almost associated with Nisyan. Nisyan is defined as loss of function in faculty of memory (Quwwat-e-Hafiza) as well as impairment of faculty of thought (Quwwat-e-fikr) and faculty of imagination (Quwwat-e-takhayyul). The impairment of these powers means there is the loss of functions of brain. Although the etiology is unknown according to unani system of medicine it is due to viscid phlegm (balgame ghaleez) and excess moistness in brain (Morimoto *et al.*, 2015). There is no complete cure expect symptomatic treatment so the herbal therapy is now anticipated to control AD progression and help to relieve the symptoms related to AD, worldwide research is being done to find effective treatment of AD. Medicinal plants used in unani system of medicine exhibit their powerful role in the management and cure of memory disorders. The study conducted at University of Sussex reopens a new era for research in AD as they have discovered the protein similar to Abeta protein (protein found in brains of AD patient). The California University has now published that, the fact memory is stored in synapse was false and it is somewhere else in the brain. These studies leave chances for regaining the lost memory. But all these are only possible if we could control the degeneration of neurons in early stage and unani medicines can contribute a lot in to it. Herbal medicine could be a good source of drugs for treatment of AD and memory deficit with fewer or no side effects (Stuart-2018). This article focuses on the etiology and treatment of AD in the view of Unani system of medicine.

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Risk Factors

Aging and family history are the major risk factors of Alzheimer's disease. The probability of getting diagnosed with Alzheimer's varies in early and late old age, for age group 60-65 it is one per cent whereas for age group from 85 and above it is 50%. Putative risk factor includes diabetes mellitus, hypertension, cardiac diseases and head trauma. Other risk factors are smoking and alcohol use, Down syndrome, mild congenital impairment and atherosclerosis. Elevated levels of homocysteine, an amino acid which naturally circulates in the blood and is a major building block also falls under risk factors. Decreased educational achievement and low socioeconomic status are also listed under risk factors because it is closely related with the medical and psychological environment a person's childhood has gone through (Iqbal *et al.*, 2012).

Etiology

Etiology of Alzheimer's disease (AD) is unknown, but Unani physicians have mentioned that it can be due to balgham ghaleez (viscid phlegm) and excess moistness in the brain. In other words, we can explain AD is caused by sue-mizaj barid ratab or sue mizaj barid Yabis i.e. maltemperment of cold quality.

This change in mizaj also alters the quwwath which determines the physical condition of the body. Hararat-e-ghareeziya is controlled by 3 quwwas. Basically life is a wheel which is composed of 3 faculties Quwwat-e-Haywaniyya, Quwwat-e-Nafsaniya and Quwwat-e-tabiya. When Quwwat-e-Nafsaniya is weak it creates neurological diseases like Nisyan, under which diseases like AD and Parkinson's are explained (Fatima *et al.*, 2017). Toxic metals including aluminum and vitamin and mineral deficiencies also cause AD in some conditions. AD is a complication of hypertension, heart disease, diabetes and depression when left untreated.

Pathogenesis

Alzheimer's is caused by brain cell death. It is a neurodegenerative disease, which means there is progressive brain cell death that happens over a course of time. The total brain size shrinks with Alzheimer's, the tissue has progressively fewer nerve cells and connections. In AD there is a decline in production of neurotransmitter acetylcholine which cause depression and depression stimulate the production of excess quantity of abnormal phlegm in the brain (Ahmer *et al.*, 2015). According to Unani perspective loss of memory is known as Nisyan and disrupts occurs in Quwat-e-Hafiza, Quwat-e-Fikr and Quwat-e-Takhauul which are due to Buroodat-wa-ratoobat and Su-e-Mizaj Barid Yabis (Fatima *et al.*, 2017). Abul Hasan Ali Bin Raban Tabri in Firdausul Hikmat narrates that in dementia (Nisyan) there is accumulation of viscid phlegm and moistness in the brain. Sometime Nisyan is produced due to excess of dryness (yabusat) because due to excessive dryness brain has no memorizing capacity. Sometime due to whole body become cold (barid). When Nisyan occurs due to excessive fluid in brain tissue then the power of memory and thinking weaken (Ahmer *et al.*, 2015).

Clinical Features

Memory loss and confusion are the main symptoms. The key clinical features is the impairment of ability to remember new information. Problems related with movement and coordination, Muscle stiffness and shuffling or dragging feet while walking, Insomnia or change in sleep patterns, Weight loss, Seizures are also seen (Reuben, D. B., and Siu, A. L. 1990).

Psychosocial symptoms are:

1. Difficulty in Communication
2. Confusion
3. Frustration
4. Depression
5. Personality changes and loss of social skills
6. Changes in mood
7. Difficulty in concentration
8. Inability to create new memories
9. Difficulty in self-care

Diagnosis

1. By Assessment of mizaj (Ahmer, S. M., and Khan, S. A.-2015).
2. Detailed patient history
3. Laboratory test
4. Rule out vitamin B₁₂ and folate deficiency
5. Rule out hypothyroidism with TFT test
6. Blood cell count serum electrolyte and LFT
7. Other diagnostic tests CT, PET or MRI may aid diagnosis
8. Amyloid PET imaging and Tau PET imaging (Hendricks-2020).

Usoole Ilaj (Line of Treatment)

1. Treat according to underlying cause of disease.
2. Elimination of cause.
3. Medication of Muhafizaat, Mushilaat, Muqawwiyat, Moaddilat, Munish e haraarat ghariziyah, Mufferahaat, Mohallilat.
4. Give nutritious diet and muqawwi drugs like kushta e faulad and compounds containing Amber, Mushk etc.
5. Exercising regularly
6. Support family members and other caregivers (Anzar *et al.*, 2014; Ahmed *et al.*, 2014).

Ilaj (Treatment)

Ilaj bil Ghiza (Diet Therapy)

1. Eat antioxidant and high fibre foods including fruits such as apple, oats, potatoes, yams.
2. Eat foods high in vitamin B and calcium eg: Beans leafy

green vegetables and spinach

3. Avoid foods with high saturated fat and cholesterol.
4. Reduce use of those substances which are responsible for the production of phelgm eg: Milk, ice water.
5. Reduce the use of sour foods e.g.: Curd, tamarinds (Fatima et al., 2017).
6. Cut down on sugar, Drink plenty of water.
7. Avoid eating too much salt (Beckett et al., 2015).
8. Meat soup, Semi boiled eggs, Maul Jubn, Maussane, Maul Laham, Maul Asl, Paneer Maya, Maazurrat, Hareera, Sirka, Khardal, Goat meat, sparrow meat, Khurfa, Palak, Kaddu, nuts like almond, hazelnut, coconut and walnut have been recommended as good foods for people with Nisyan etc. (Ajmal-1983; Khan et al., 2013; Tabri-1995).

Ilaj bil tadbeer (Regimental Therapy)

It is a method through which maintained of general health and care of the sick person are attained through modulations or modifications of asbab-e-sitta zarooryah (six essential factors). These regimens are actually meant for evacuation of the istifraagh –e- akhlaat-e- radiya (evacuation of morbid matter) from the body. These morbid humors are true culprits which are basically responsible for the onset of disease.

1. Daily riyazat (exercise)
2. Bathing in water containing gandhak (sulphur) suhaga (borax)and shib (alum)
3. Dalk (massage) with rough cloth with hot oil
4. Mild istefragh with the help of ayarij.
5. Nutool (pouring), Huqna (Enema), Gargarah (gargle). (Rhazi-1997; Arzani-YNM; Allama Kabiruddin-2009; Nasir et al., 2013-2014).

Ilaj bil dawa (Pharmacotherapy)

Mufrad Advia (Single Drugs)					
S. No	Drugs	Scientific Name	Mizaj	Afaal	Dose
1	Asgand	Winthania somnifera	Haar Yabis	Muqawwi-e-asaab , Mohallil , Muqawwi-e-jism	3-5gm
2	Ustukhudus	Lavendula	Haar Yabis	Muqawwi o munqi dimagh o asaab, Muhallil,	5-7gm
3	Amla	officinalis	Yabis	Muqawwi aza-e-rayees	3-5gm
4	Amber	Ambericgris	Haar Yabis	Mufferah , Muqawwi qalb o dimagh	1-3gm
5	Mushk	Beeswaa cera	Haar Yabis steochas	Mufferah , Muqawwi aza-e-rayees	1-2gm
6	Sumbulut tibb	Valeria jatamansi	Haar Yabis	Mohallil , Muqawwi kabiid wa dimagh	3-5gm

7	Akhrot (walnut)	Juglans regia	Haar Yabis	Muqawwi-e-asaab , Muqawwi aza-e-rayees	3-5gm
8	Badranjboya	Mellisa officinalis	Haar Yabis	Mufferah wa Muqawwi-e-qalb , Mohallil	3-5gm
9	Brahmi	Bacopa monneri	Haar Yabis	Muqawwi wa muhafiz-e-dimagh, Muqawwi aza-e-rayees , Musaffi khoon	3-5gm
10	Kundur Badam	Boswellia serrata	Haar Yabis	Muqawwi wa muhafiz-e-dimagh, Muqawwi aza-e-rayees , Musaffi khoon	1-3gm
11	Shireen	Prunus amygdalus	Haar Ratab	Muqawwi wa muhafiz-e-dimagh	3-5gm
12	Zafran	Crocus sativas	Haar Yabis	Mohallil , Muqawwi qalb o dimagh	1-2gm

Murakkab Advia (Compound Drugs)			
Sl. No	Name	Action	Dose
1	Majun Brahmi	Muqawwi-e-asab, Muqawwi-e-dimagh wa Hafiza	5-10gm with water
2	Majun Falsafa	Muqawwi-e-dimagh, Muqawwi-e-Aasab	5-7gm
3	Majun kundur	Muqawwi-e-dimagh , Muqawwi-e-asab	5gm with Qurs kushta kabsul hadid or Qurs kushta baiz murg
4	Majun Najah	Muqawwi-e-asab, Muqawwi-e-dimagh wafafiza	5-10gm
5	Ithriphal Ustukhudoos	Muqawwi-e-Dimagh	5-10gm with Arq-e-gaozaban
6	Rogan Banafsha	Stregnthens brain, Removes drines, calms mind and induce sleep	Take in samll amount and warm it before mas-saging
7	Roghan Zait-hoon	Murattib, Mulayyin, Musakkin , Muqawwi-e-aza-e-rayees, Muqawwi-e-asab	6 masha-1 tola
8	Rogan Nargis	Musakkin, Used in neurological pain	Used with rogan-e-sosan
9	Dawaul Musk Barid	Muqawwi-e-dimagh, Muqawwi-e-qalb,	3-5gm with Arq-e-gaozaban or

(Kunte-2013; Kirti-2010; Fouzia et al., 2019)

CONCLUSION

From the above discussion it is clear that a wide range of medicinal plants with potential therapeutic effects can

be administered in patients with AD. Diet therapy and regimental therapy can also support the Management. Over centuries the life span of human has raised, a disease with age as risk factor increases the difficulty in managing population. Unani medical theories (biophysics) can also be taken in account to find the unknown biochemical cause of AD.

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