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Preventive, promotive and curative aspects of dementia in complementary medicine (Unani): Through-Black Box Design

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Abstract

Dementia is a neurological (*asabi*) syndrome and manifestation of different pathological changes occurs in the brain-characterized by pause of multiple higher cortical functions, as well as memory, thinking, comprehension, orientation, calculation, learning capacity, language and judgment without any blemishes in consciousness. In 60-80% cases Alzheimer's disease is the most common form of senile dementia (*nisyan/zof-e-dimagh*). 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 *Broodat-wa-ratoobat* and *Su-e-Mizaj Barid Yabis*. This syndrome can be prevented by health promotive approach of Unani System of Medicine which takes consideration in vital organs and whole body. Unani scholars mentioned different regimes (*Nutool*, *Dalk*, *Riyazat*, *Hijama*, *Hammam*, Dietotherapy) and drugs therapy-Mufradat such as; Barhami (*Bacopamonnieri*), Baladur (*Semecarpus anacardium*), Gilo (*Tinospora cordifolia*), Halela (*Terminalia chebula*), Balela (*Terminalia bellerica*), Amla (*Emblca officinalis*), Waj (*Acorus calamus*), Qust (*Saussurea lappa*), Kulanjan (*Alpinia galanga*), Kundur (*Boswellia serrata*), Sad Kofi (*Cyperus rotundus*), Aqarqarha (*Anacyclus pyrethrum*), Jatamansi (*Nardostachys jatamansi*) etc. *wa Murakkabat* (polyherbomineral formulations) such as; Majoon Barhami, Majoon Bolas, Majoon Baladur, Majoonwaj, Majoon Falsafa, Majoon Kundur, Itrifal Sagheer, Jawarish Jalinoos etc. for the management of *Nisyan* which shows nootropic activity against age related dementia. The present review aims to explore the pharmacology, pharmacokinetics, spectrum of activity with reference to Unani Medicine.

Keywords: Dementia, Nisyan, Zof-e-Dimagh, Neurological Syndrome, Complementary Medicine, Black Box Design

1. Introduction

Dementia is a disorder characterized by problems with memory and at least one other cognitive function (learning, reasoning, language, spatial ability and orientation, and handling complex tasks) that are severe enough to interfere with activities of daily living. Dementia may have different aetiologies ^[1].

2. Incidence and Prevalence

Exact estimates of the prevalence of dementia depend on the definition and specific threshold used. The syndrome affects approximately 5%-8% of individuals over age 65, 15%- 20% of individuals over age 75, and 25%-50% of individuals over age 85 ^[2].

Alzheimer's disease is the most common form of dementia (60–80%) and is characterized by pathological changes in the brain that result in loss of memory, thinking, and language skills, as well as changes in behaviour, and that ultimately lead to a complete loss of functional ability. According to Alzheimer's Association 2012, it is the most common form of dementia in the elderly. Non-Alzheimer's dementias are disorders characterized by problems with memory and cognitive function plus other unique clinical features ^[3, 4].

3. Dementia Worldwide

The WHO 2012 Report "Dementia: a public health priority" estimates there are at present 35.6 million people living in dementia worldwide. Alzheimer disease is the most frequent cause of dementia in Western societies. As the world population ages, the frequency is expected to double by 2030 and triple by 2050. Neither healthcare nor financial systems are prepared to face the magnitude of the situation ^[5, 6].

4. Signs and Symptoms

The signs and symptoms of AD gradually worsen over time. Symptoms may include confusion and memory loss, disorientation and changes in mood and behaviour. As the disease progresses, patients usually develop difficulty with activities of daily living, agitation and depression, difficulties recognizing family and friends, loss of speech and, eventually, total dependence on others [2].

5. Aetiology and pathology of Nisyan as per Unani concept

Physical condition of the body is totally dependable upon three quwa (faculties), which advocate the Harart-e-Ghareeziya (innate body heat) and controlled the all functions of the body [7]. Basically life is a wheel which is composed of

three spokes (faculties) i.e. Quwwat-e-Nafsaniya, Quwwat-e-Tabie'yya and Quwwat-e-Haiwaniya [Figure. 1]. When disturbances occur in these three faculties it leads to degenerative changes and finally end of life. Initially when Quwwat-e-Nafsaniya is weak, it creates neurological associated problems such as Nisyan (Dementia), Alzheimer's disease and Parkinson's disease etc. Quwwat-e-Tabie'yya is responsible for production of pure humours and maintains balance of Ratoobat-e-Ghareeziya and Hararat-e-Ghareeziya. Quwwat-e-Haiwaniya is responsible for circulation of blood and protects the body from free radicals. Free radicals also initiate the process of aging i.e. Nisyan is more common among age related peoples [Figure. 2] [8].

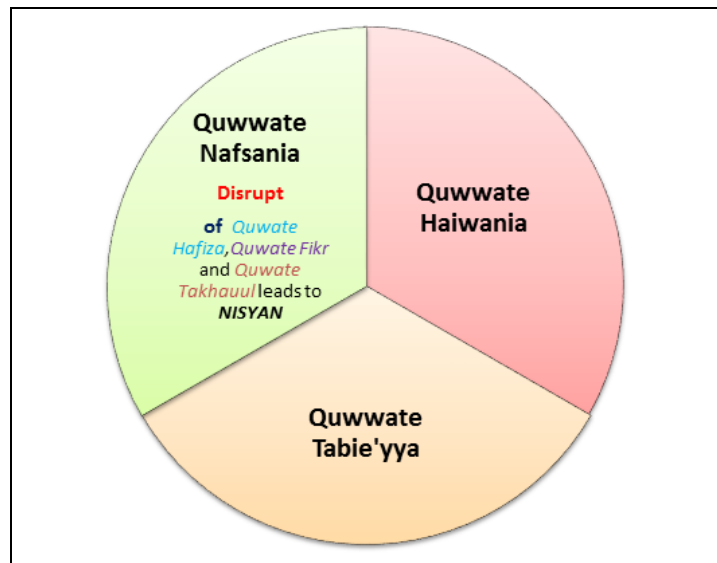


Fig 1: Illustrate the wheel of life (Mainly disrupts occurs in *Quwwat-e-Hafiza*, *Quwwat-e-Fikr* and *Quwwat-e-Takhaaul* which leads to dementia/nisyan/zof-e-dimagh).

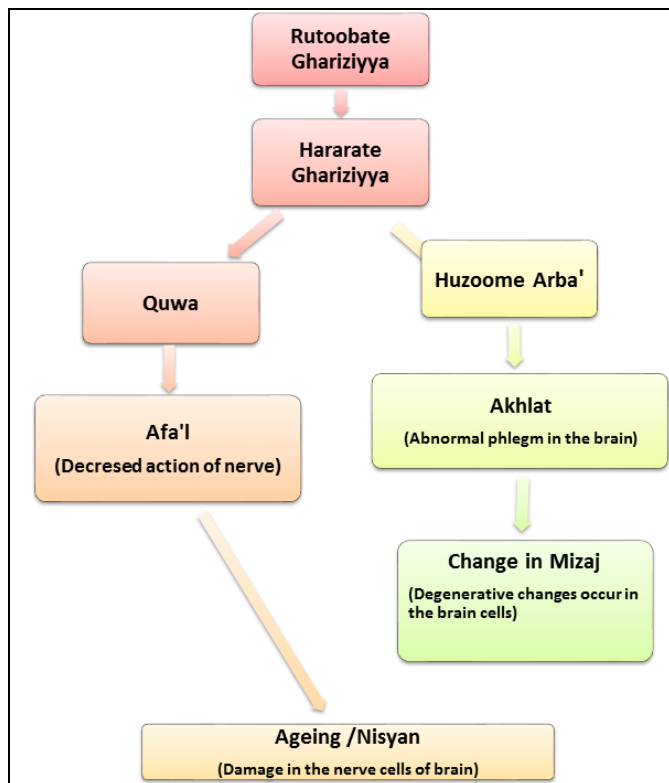


Fig 2: Illustrated the mechanism of aging and Nisyan (↓This arrow indicates the diminishing the quality of brain cells).

6. Predisposing factors for Nisyan

Excessive use of those substances which are responsible for the production of phlegm (Milk, vegetables, Hareesa, Ice water), excessive use of sour foods (Curds, Tamarind, Pickles), excessive coitus, excessive Hammam, Amraz-e-muzmina (Sil-wa-Diq, Sartan, Ziabetus-Shakri, Siman-e-mufrit), Amraz-e-Asaab (Sara, Sarsaam, Sakta, Jamood, Falij, Istirkha), mal-nutrition, genetical cause, psychological cause, inadequate sleep, Kasarat-e-sharab, excessive intake of Kishneez, Onion, Lahsun, Bandhgobhi, Lobiya, Masoor Dal, Baaqla, Tafarruq-wa-ittesal, Sue Mizaj, Zof-e-Dimagh, Dominancy of lezdaar Balgham (implastic phlegm) and Ratoobat in brain, sometimes dominancy of yoboosat in brain and sometimes whole body temperament becomes Baarid [8, 11].

7. Usool ilaj of Nisyan

Eliminate the real cause of the disease, avoid consumption of foods which altered temperament of *Dimagh* (brain) leads to *Baroodat* (coldness) and *taqleel-e-hararat-e-ghareeziya* (decreases innate heat) of the brain, keep away from use of freezing and cold water, avoid *ratab* (moist), *ghaleez* and *dushwar hazmghiza* (hardly digestible food), daily *riyazat* (exercise) in empty stomach, bathing in water which containing *gandhak* (sulphur), *suhaga* (borax) and *shib* (alum), *Dalk*(massage) by rough cloth with *garam roghan* (hot oil), avoid *Hammam* (bath) and *Jimah* (sexual intercourse) immediately after meal, need of mild *istefragh* with the help of *Ayarij* (*Aloe barbedensis*) and *Habbul Neel* as

it removes *ghaleez* (hard), *lesdar* (sticky) and *Balghami fuzla* (vitiated phlegmatic fluid) from body, if etiology is due to *Ehtabas-e-tams* (amenorrhoea) wa *bawaseer* (piles), then *fasd* (phlebotomy) is required when condition of patient is good, because *tabiyat* (physis) will be activated for the production of new cells in the blood and protect the *khuliyat-e-asab* (nerve cells) [12, 13].

8. Preventive measures (*tahaffuzi tadabeer*):

Unani Medicine recognizes the influence of environment and surroundings on health and lays great emphasis on the maintenance of proper eco balance as well as pure water, food and air. Besides, it prescribes *AsbabSitta Zaruriyya* (six essentials causes) for maintaining good health adherence to which is essential for preservation of health, walking in open air, and to stay in open airy ventilated houses, maintain proper *Hifzan-e-Sehat Shakhsi* (personal hygiene), eatables should be washed and cooked properly, drink clean and boiled water, regular exercise is recommended, proper and adequate rest is essential, maintain equilibrium in mental activities, adequate sleep is essential, maintain equilibrium in *Ehtebas-wa-Istefragh* [13].

9. Treatment or management of Nisyan

Management or treatment of the nisyan does not give in single entity but treatment is given in the form of package i.e. *Ilaj Bilghiza* (dietotherapy), *Ilaj Bil Tadbir* (regimenal therapy) wa *Nafsiyati Ilaj* (Psychotherapy) and *Ilaj Bil Dawaa* (pharmacotherapy) [14]. The study of traditional medicine (Unani System of Medicine) can also be undertaken in a “black-box” manner (WHO 2000). This means that the treatment and all of its components are delivered, as they would be in the usual clinical situation. In this type of study, no component of the treatment “package” is isolated and studied independently. This allows the effectiveness of Unani medicine to be determined either within its own theoretical framework or within that of conventional medicine [15].

10. Package of treatment (black box designing) which is used generally

10.1 *Ilaj Bil ghiza* (Dietotherapy)

The substance, which after administration and Istihala, becomes the part of the body or organ and provides Badl Ma Yatahallal [14]. Ghiza-e-Lateef, Kasir-ut-TaghziawaJaiyyad-ul-Kaimus (attenuated highly nutritious and good chime forming), Ghiza-e-Saree-un-nafooz (fast penetrative diet) and muqawwi ghiza (vigorous diet) is suitable for the patient of nisyan. eg. Meat soup, Semi boiled eggs, Maul Jubn, Maassane, 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. [16, 17, 18].

10.2. *Ilaj Bil Tadbir* (Regimenal therapy) wa *Nafsiyati Ilaj* (Psychotherapy):

It is a type of therapy which is given in the form of regime to maintain the health of a person. This therapy creates changes in the obligatory causes of health i.e. *Asbab-e-Sitta Zaruriyya* (six essentials of health) on the principle of ‘*Ilaj Bil Zidd* (heteropathy). It deals with various rules for improving health and physical or mental well-being or any intervention other than medicine that restores the health [14]. There are various regimes which is beneficial for the management of nisyan such as; riyazat (exercise), dalk (massage), nutool (pouring), marukhat (An oil or oily drug for application on external

organs. This may be mixed with suitable drugs.), huqna (enema), atoosh (sneezing), zimad (paste), gargarah (gargle) etc. [9, 11, 16, 19, 21].

10.3 *Ilaj Bil Dawaa* (Pharmacotherapy)

Unani System of Medicine is based on the drugs originated from plants, animals and minerals Unani System prefers treatment through single drugs and their combination in raw form, rather than compound formulations [22]. A long time before Unani Physician mostly uses single drugs as Nuskha Navesi (prescription) and also compound formulations but present scenario mostly used compound formulations. And it is expected that as future single ingredients will be more chances of uses during clinical practice.

10.3.1. Compound formulations in classical text

There are many compound formulation which are described in Al-Havi, Kamil Us sana, Zakhira Kharzam Shahi, Al Qanoon Fit Tib, Fidaus Al Hikmat, Shareh Asbab, Tibbe Akbar, Iksir-e-Azam are Majoon Barhami, Majoon Bolas, Majoon Baladur, Majoon Waj, Majoon Falasafa, Majoon Kundur, Itriphal Sagheer, Itriphal Ustakhuddus, Jawarish Jalinoos, Majoon Najah, Roghan Qust, Roghan Banafsa, Roghan Zaitoon, Roghan Nilofar, Roghan Nargish, Roghan Habbul Ghar [23, 28].

11. Scientific studies on mufrad drugs (single ingredients)

Barhami (*Bacopa monnieri*), Waj (*Acorus calamus*), Kundur (*Boswellia serrata*), Zanjabeel (*Zingiber officinalis*), Khardal (*Brassica nigra*), Halela (*Terminalia chebula*), Balela (*Terminalia bellerica*), Amla (*Embllica officinalis*), Haldi (*Curcuma longa*), Elva (*Aloe vera*), Qust (*Saussurea lappa*), Saadkofi (*Cyperus rotundus*), Jatamansi (*Nardostachys jatamansi*), Kabab Chini (*Piper cubeba*), Fil Fil Daraj (*Piper longum*), Aqarqarha (*Anacyclus pyrethrum*), Gilo (*Tinospora cordifolia*), Khulanjan (*Alpinia galangal*), Asgand (*Withania somnifera*), Ustakhuddus (*Lavandula stoechas*), Baladur (*Semecarpus anacardium*), Darchini (*Cinnamomum zeylanicum*), Ood Saleeb (*Paonea officinalis*), Zaafran (*Crocus sativus*), Qaranfal (*Syzygium aromaticum*), Pista (*Pistacia vera*), Tulsi (*Ocimum basilicum*), Asarron (*Valerina wallichil*), Chilghoza (*Pinus gerardiana*). Almond (*Prunus amygdalus*) [29, 42].

12. Conclusion

Loss of Memory, forgetfulness and confusion are old age related problem of life. In old age temperament of the body becomes *Barid Yabis*. So, the temperament of brain also more *Barid* and *Quwat-e-Nafsanayah* of brain decrease. It is natural process that temperament becomes *Barid Yabis* but some people which vvhav weak *Tabiyat* and less *Hararat-e-gharizi* in compare to other that people affected with type of disease. In the concept of Unani Medicine first priority is given to preventive measures like dietary modifications, life style modifications in old age people. Although this type of disease occurred then we follow the Unani principle of treatment. Basically Dementia is mainly due to *Burudat-e-Dimagh* (coldness of brain) so the medicine is advised which has Hot temperament. According to the *Zakariya Razi*, *Kaifiyat-e-Kaifiyatefaila* (active quality) is more important than *Kaifiyat-e-munfaila* (passive quality) in treatment of dementia. In this way single Unani drugs like Barhami (*Bacopa monnieri*), Baladur (*Semecarpus anacardium*), Waj (*Acorusc alamus*), Kulanjan (*Alpinia galanga*), Kundur (*Boswellia serrata*), Sad Kofi (*Cyperus rotundus*), Aqarqarha (*Anacyclus pyrethrum*) and compound drugs like *Majoon*

Barhami, Majoon Bolas, Majoon Baladur, Majoon Waj, Majoon Falsafa, Majoon Najah, Jawarish Jalinoos, Roghan Zaitoon are more beneficial in dementia.

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