Geriatric management in medieval Persian medicine

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ABSTRACT

In Iran, a large group of patients are elderly people and they intend to have natural remedies as treatment. These remedies are rooted in historical of Persian and humoral medicine with a backbone of more than 1000 years. The current study was conducted to draw together medieval pharmacological information related to geriatric medicine from some of the most often manuscripts of traditional Persian medicine. Moreover, we investigated the efficacy of medicinal plants through a search of the PubMed, Scopus and Google Scholar databases. In the medieval Persian documents, digestible and a small amount of food such as chicken broth, honey, fig and plum at frequent intervals as well as body massage and morning unctoning are highly recommended. In the field of pharmacotherapy, 35 herbs related to 25 families were identified. Plants were classified as tonic, anti-aging, appetizer, memory and mood enhancer, topical analgesic and laxative as well as health improvement agents. Other than historical elucidation, this paper presents medical and pharmacological approaches that medieval Persian practitioners applied to deal with geriatric complications.

Key Words: Geriatric medicine, herbal therapy, medieval persia

INTRODUCTION

Geriatric medicine or clinical gerontology, as a branch of medical sciences specifically deals with health problems as well as care and treatment of older people.[¹] Becoming a prominent issue, this branch aims to improve function, overcome environmental problems and keep older adults healthy in normal activities.[²] Since the population of older adults is increasing even two to three fold during the first century of this millennium,[³] attempts to improve the aspects of geriatric medicine is enhanced.

Geriatric patients are defined as a group of patients over 65 years, but frail with multiple comorbidities and various functional impairments.[⁴] Excessive decline in body mass, reduction in walking performance and presence of exhaustion as well as fatigue are associated with the aging process in geriatric patients.[⁵] In addition to these conditions, geriatric persons also suffer from different chronic diseases that affect their life.[⁶]

As a natural and universal process, aging is accompanied with many biological changes.[⁷] These changes encompass progressive decrease in physiological functions and increase in disabilities. This gradual decline affected by dietary, environment, life-style and genetic factors.[⁷] Accordingly various medications need to be considered for this period of age and also older adults are the major user group of medications.[⁸] However, it should be noted that the medical approach can hardly help the elderly people alone and additionally other aspects of management are needed to be considered.[⁹] Therefore, complementary and integrative medical and pharmacological approaches can be beneficial in the improvement of geriatric medicine.

Various traditional and complementary systems of medicine such as Unani, Indian, Chinese and Persian have been contributed to the promotion of medical sciences.[¹⁰] Many documents containing information on
geriatric medicine can be found from these systems of medicine. Medical manuscripts authored by medieval Persian practitioners, which are not only a summation of other traditional medical systems information, but also a collection of their own experiences involve beneficial findings about geriatric medicine.

In this regard, present paper attempted to draw together medieval pharmacological information and those recommended treatments related to geriatric medicine from some of the most often manuscripts of traditional Persian medicine (TPM).

**METHODS**

The employed study method of the present paper was based on the investigation of the remaining manuscripts of Persian medicine during 10th–18th century AD. Therefore, pharmacological information related to geriatric medicine was collected by searching through six important pharmacopeias of Persian medicine.

These manuscripts are Liber Continents by Rhazes (9th and 10th centuries), Alabnieh an haghaegh-ol-advieh by Aboo mansour Heravi (11th century), The Canon of medicine by Avicenna (10th and 11th centuries), Ikhtiyarat-e-Badiyee by Zein al-Din Attar Ansari Shirazi (14th century), Tohfat ol Moemenin by Mohammad Tonkaboni (17th century) and Makhzan-ol-Advieh by Aghili-Shirazi (18th century). In addition, some medical textbooks of medieval Persian medicine were also studied to derive traditional important facts for older adults.

Other books such as “matching the old medicinal plant names with scientific terminology,” “dictionary of medicinal plants,” “dictionary of Iranian plant names,” “popular medicinal plants of Iran,” “Pharmacographia indica” and “Indian medicinal plants” were studied for nomenclature of medicinal plants.

**RESULTS AND DISCUSSION**

In Persian medical manuscripts chapter related to geriatric medicine is generally mentioned under a subject namely “Tadbeer-e-mashayekh” or elderly devise. There, the physiology of senescence is meticulously discussed in terms of principal fundamentals such as temperament, humors, spirits, faculties or forces and functions.

Early Persian physicians classified the growth and development stages into four main steps. First step is defined as growth period or pediatric stage. Second is the youth period and midlife stage is considered as the third stage. Accordingly, the last step is introduced as the old stage with is starting at the age of 60. Due to the fundamentals of humoral medicine, it was believed that people in the old ages have a cold and dry temperament and it bounds to change easily by extrinsic and intrinsic affecting factors.

Taken as a whole, Persian practitioners believed that older adults should have light, easily digestible and a small amount of food at frequent intervals in their regimen. As constipation is more common and usual in the elderly, it was said that the bowels should be kept soft by the administration of mild laxative food or fruits such as chicken broth, honey, fig, plum and etc., Vegetables such as carrot and cabbage as well as fruits such as grapes and citruses have been also introduced beneficial. Furthermore, boiled milk was defined as a proper meal for old people especially if it is associated with honey. In contrast fruits, food and additives such as eggplant, beef and vinegar should be used in low amounts. Body massage, morning unctioning with popular oils such as olive, almond, lily and sesame oil as well as light exercise were highly recommended in Persian manuscripts. These approaches are likely useful in disorders such as vertigo, constipation and insomnia. In addition to these facts, Persian scholars have recommended adequate sleep during the day and night for older adults.

Persian medieval scholars have recommended medicinal herbs in addition to routine dietary of an old patient. According to their recommendations, plants related to geriatric medicine are classified into tonic, anti-aging, appetizer, memory and mood enhancer, topical analgesic and laxative as well as health improvement agents. A total of 35 mentioned herbs regarding to twenty five plant families are derived from selected pharmacopeias of traditional medicine. The family Rosaceae is the one which involves most cited medicinal plants related to geriatric medicine. Applicable herbs of Asteraceae, Lamiaceae and Fabaceae are cited subsequently [Table 1].

It should be noted that a tremendous part related to geriatric medicine deals with preventive approaches. Therefore, a large group of medications and supplements for the geriatric stage may be represented as anti-aging agents as well as health enhancers.

According to the Persian pharmaceutical manuscripts, cited medicinal plants are mostly mentioned to have anti-aging, health improvement and tonic effectiveness. Although the anti-aging activity of anti-oxidant agents are not well-accepted, but it is remarked that agents having antioxidant or immunomodulatory effects can be considered as anti-aging supplement. Therefore, it seems that herbs, which were traditionally administered as anti-aging...
Table 1: Herbal geriatric remedies used in medieval Persia

| Family          | Scientific name     | Traditional name | Part used | Application for elders | Reference(s)* |
|-----------------|---------------------|------------------|-----------|------------------------|----------------|
| Acoraceae       | Acorus calamus L.   | Vaj               | Root      | Health improver         | [5,6]          |
| Amaryllidaceae  | Allium sativum L.   | Soom             | Root      | Anti-aging              | [1,2,4,6]      |
| Anacardiaceae   | Mangifera indica L. | Anbaj            | Fruit     | General tonic           | [2,4,6]        |
| Apiaceae        | Bunium persicum (Boiss.) B. Fedtsch. | Kommoon | Seed     | Health improver         | [5,6]          |
| Arecaaceae      | Cocos nucifera L.   | Narjeel          | Fruit     | Anti-aging, general tonic | [2,6]        |
| Asteraceae      | Tanacetum parthenium (L.) Sch. Bip. | Aghhovan | Flower   | Sleep improver          | [5,6]          |
| Boraginaceae    | Myosotis scorpioides L. | Azanofar | Aerial part | General tonic          | [4,6]          |
| Combretaceae    | Terminalia chebula Retz. | Ahilaj    | Fruit    | Memory enhancer         | [5,6]          |
| Cucurbitaceae   | Bryonia dioica Jacq. | Foshagh    | Fruit, leaf | Anti-aging            | [3,5,6]        |
| Cuscutaceae     | Cuscuta epithymum L. | Alfimoon | Aerial part | Health improver        | [5,6]          |
| Fabaceae        | Lupinus termis L.   | Termes           | Seed      | Laxative                | [2,3,6]        |
|                | Abrus precatorius L. | Ain-ol-deek | Seed | Anti-aging              | [5,6]          |
|                | Cicer arietinum L.   | Hemmas          | Seed      | Appetizer, general tonic | [2,3,5,6]      |
| Juglandaceae    | Juglans regia L.    | Jowz             | Fruit     | Memory enhancer         | [1,4]          |
| Lamiaceae       | Dracophyllum kotschyi Boiss | Zarringiah | Root | General tonic           | [4]            |
| Meliaceae       | Melissa officinalis L. | Badrajbooye | Leaf | Mood enhancer           | [4,6]          |
| Myristicaceae   | Myristica fragrans Houtt. | Jowzbooa | Fruit | Anti-aging              | [2,3,5]      |
| Myrtaceae       | Myrtus communis L.  | Moord            | Leaf      | Health improver         | [3,4,6]        |
| Oleaceae        | Olea europaea L.    | Zeytoon          | Fruit oil | Analgesic for chronic pain | [2,5,6]      |
| Poaceae         | Saccharum officinarum L. | Sokkar    | Extract   | Anti-aging              | [1,4]          |
| Polygonaceae    | Persicaria bistorta (L.) Samp. | Anjebay | Aerial part | General tonic        | [5,6]          |
| Punicaceae      | Purna granatum L.   | Jolnar           | Flower    | General tonic           | [3,5,6]        |
| Rosaceae        | Cotoneaster nummularius Fisch. And Mey. | Shir Khesht | Gum | Health improver         | [2,4,6]        |
|                | Prunus dulcis (Mill.) D.A.Webb | Lawz    | Seed oil | Analgesic for chronic pain | [1,4]          |
|                | Malus domestica Borkh. | Toffah | Fruit | Appetizer, general tonic | [2,6]          |
|                | Prunus mahaleb L.    | Hab-ul-mahlab   | Seed      | General tonic           | [5,6]          |
| Rubiaceae       | Coffea arabica L.    | Bon              | Seed      | Mood enhancer           | [3,4]          |
| Smilacaceae     | Smilax chinensis L.  | Choob-e-chini    | Root     | Anti-aging, general tonic | [3,5,6]      |
| Zingiberaceae   | Curcuma zedoaria (Christm.) Roscoe | Jadwar | Root | Appetizer, general tonic | [5,6]          |

*Traditional Persian pharmacopoeias*: The book of Ahsined om haghegh or advieh by Aboo mansour Heravi (12th century), the oldest documented Persian book in the world that has 5,477 monographs involving simple herbal, animal and mineral medicines in alphabetical order. An original manuscript has 400 pages and is kept in Vienna museum. The Canon of medicine: Which is one of almost 450 treatises written by the Persian scientist and physician Avicenna. It remained a medical sciences authority up near 18th century. Eight hundred natural medicines along with comments on their application and effectiveness are gathered in the book. The book of Alkhayrat-e-Baladiee, a comprehensive Persian pharmacopoeia of simple and compound medicine in 1368 A.D by 'Ali ibn al-Husayn Ansari Shirazi, (1328–1403). The treatise contains two parts involving medicaments in alphabetical order and involving 1698 monographs. CNS: Central nervous system medicine or remarked to be a health improver [Table 1] may have antioxidant activity [Table 2]. In addition to anti-aging properties of antioxidant agent, they are also said to have memory enhancing as well as cholinesterase inhibitor properties.[31,32] Table 2 reports studies in line with clinical properties, which were traditionally introduced by Persian practitioners as well. In this regard, most cited herbs exhibit antioxidant effects, which are followed by immunomodulatory and neuroprotective activity. Meanwhile, most related investigations in contemporary medicine are carried out under an animal study method. Only in two studies, evaluation was done as a human study and clinical trial. Therefore, further investigation is needed to be performed.
CONCLUSION

Obviously, there are many possible targets and available approaches related to TPM that might help to develop new and effective medical managements for geriatric medicine. As for other traditional systems of medicine, such information is based on centuries of experience in medieval Persia and offers detailed explanations of the skillful approaches that show the importance of this field in medieval medicine.

Beside historical elucidation, this paper presents medical and pharmacological approaches that medieval Persian practitioners applied to deal with geriatric complications. Considering the hopeful results related to these medieval findings through scientific methods can help to carry out more comprehensive and effective investigations in the field of geriatric medicine.

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