

# Anti-Aging Drugs in Unani Medicine

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## Abstract

Aging is a process of gradual, progressive and generalized impairment of functions resulting in the loss of adaptive response to stress and in increasing the risk of age-related diseases. According to Unani concept, aging is the result of *tahleelatoobateghareezia* by *hararateghareezia* to maintain the organism in functional state and inadequate Compensation of *tahleel* by *Quwwatehadima* that maintain balance or homeostasis. Geriatric care is mentioned in unani literature under the heading of *tadabeermashaikh*. The concept of protection of an organ, stimulation of *Hararate-gharizia* and augmentation of vital force of important organs is the distinguishing feature of Unani medicine. The concept aims at maintaining the vitality of organs by protecting it from untoward stimuli and strengthening it to be able to cope with the diverse physiological climate. A number of drugs like Amla, Zanjabeel, Garlic, Kalonji categorize to possess such effects are frequently used in unani medicine. Some of the drugs studied in recent years demonstrate promising effect.

**Keywords:** Unani medicine; Anti-aging drugs; Antioxidant activity

## Introduction

According to Tibbeunani, the people of above 60 years of age are considered as *mashaikh*. Unani scholars were well aware about the aging process and categorize the *mashaikh* under *abdanezaeafa* [1]. According to modern theory, Aging is a process of gradual, progressive and generalized impairment of functions resulting in the loss of adaptive response to stress and in increasing the risk of age-related diseases [2]. While according to unani concept, aging is the result of *tahleelatoobateghareezia* by *hararateghareezia* to maintain the organism in functional state and inadequate Compensation of *tahleel* by *Quwwatehadima* that maintain balance or homeostasis. Due to increased *tahleel* of *ratoobateghareezia*, *hararateghareezia* weakens because *ratoobateghareezia* provide matter for *hararateghareezia*. *Quwwatehadima* also get weakened due to weakness in *hararateghareezia*, ultimately resulting in decreased formation of *akhlal* and *ratoobat*, and decreased availability of the substitute of *tahleel*. Decrease in *hararateghareezia* changes the *mizaj* relatively to *barid*; gradual increase with age in *baroodat* results in decline of *quwa* (faculties) thereby *afaal* (functions) of the body. As all *quwa* requires *hararat* for performing *afaal* (function). Depravity of humours or dryness continues neutralizing the *ratoobat* of the body until the form ceases to have a capacity for life. Thus, healthy aging can be secured by the safeguarding of innate moisture from too rapid dissipation, and maintaining it at such a degree of strength that the original type of constitution peculiar to the person shall not change even up to the last moment of life [3-8]. A number of single and compound drugs like Amla, Zanjabeel, Asgandh, Garlic, Zafraan, Kalonji, Tiryawabai, Majoonfalasa etc. categorize to possess such effects are frequently used in unani medicine and now are proven to have anti-oxidant and immunomodulator properties. Scientific studies revealed that, antioxidant drugs have definite role in the prevention of geriatric diseases (Table 1).

## Recent Studies on Various Drugs

### Tiryawabai

It is an unani compound formulation, ingredients are Elva, Mur-makki and Zafran in the ratio of 2:1:1. A randomized placebo controlled trial was conducted at NIUM hospital, Bangalore. 30 immunocompromised elderly persons were selected and randomly assigned, 20 in test and 10 in control group. *Tiryawabai* (Unani compound formulation) was given to test group 500 mg orally three

times a week for 45 days. Placebo was given orally to the control group at a dose of 500 mg three times a week for 45 days. Response was assessed by TLC, lymphocyte percentage, Absolute lymphocyte count and CD4 count. The test drug showed statistically significant increase in TLC ( $P < 0.001$ ), Lymphocyte percentage ( $P < 0.001$ ), ALC ( $P < 0.001$ ) and CD4 count ( $P < 0.001$ ) in comparison to control group [9].

### Asgand (*Withaniasomnifera*)

In a double-blind clinical trial, ashwagandha was tested in a group of 101 healthy males, 50-59 years old, at a dosage of 3 grams daily for one year. A significant improvement in hemoglobin, red blood cell count, hair melanin, and seated stature was observed. Serum cholesterol decreased and nail calcium was preserved. Erythrocyte sedimentation rate decreased significantly and 71.4 percent reported improvement in sexual performance [10].

### Amla (*Emblicaofficinalis*)

Vitamin C in EO accounts for approximately 45-70% of the antioxidant activity. The administration of ethyl acetate (EtOAc) extract of Amla or Sun Amla (Taiyo Kagaku Co., Ltd., Japan) reduced the elevated levels of urea nitrogen and serum creatinine in the aged rats. Oral administration of this extract significantly reduced thiobarbituric acid-reactive substance levels of serum, renal homogenate and mitochondria in aged rats, suggesting that Amla would ameliorate oxidative stress under aging. The increase of inducible nitric oxide synthase (iNOS) and cyclooxygenase (COX)-2 expressions in the aorta of aging rats were also significantly suppressed by EtOAc extract of Amla or Sun Amla extract. EtOAc extract of Amla or Sun Amla reduced the COX-2 and iNOS expression levels by inhibiting NF-kappaB activation in the aged rats. Thus Amla would be a very useful antioxidant for the prevention of age-related renal disease [11].

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**Received** December 20, 2013; **Accepted** February 14, 2014; **Published** February 17, 2014

**Citation:** Itrat M, Khan JA (2014) Anti-Aging Drugs in Unani Medicine. J Community Med Health Educ 4: 275. doi:[10.4172/2161-0711.1000275](https://doi.org/10.4172/2161-0711.1000275)

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S. No.	Name of Drug	Origin	Scientific name
1	Aamla	Plant	<i>Emblicoefficialis</i>
2	Anjeer <sup>5</sup>	-do-	<i>(Ficuscarica)</i>
3	Asgand <sup>5</sup>	-do-	<i>(Withaniasomnifera)</i>
4	Aabresham <sup>5</sup>	Animal	<i>(Bombyxmori)</i>
5	Ambar <sup>5</sup>	-do-	<i>(Ambragrasea)</i>
6	Asl <sup>5</sup>	-do-	<i>(Honey)</i>
7	Badam	Plant	<i>(Prunusamygdalus)</i>
8	Badranjboya <sup>5</sup>	-do-	<i>(NepetaHindostana)</i>
9	Behman <sup>5</sup>	-do-	<i>(Centaureabehen)</i>
10	Busd	Animal	<i>(Coralliumrubrum)</i>
11	Darchini	Plant	<i>(Cinnamomumzeylanicum)</i>
12	Darunaj	-do-	<i>(Doronicumhookeri)</i>
13	Elva	-do-	<i>(Aloe barbadensis)</i>
14	Faranjmushk	-do-	<i>(Ocimumgratissimum)</i>
15	FilfilDaraz	-do-	<i>(Piper longum)</i>
16	Gandana	-do-	<i>(Allium ascalonicum)</i>
17	Gaozaban	-do-	<i>(Boragoofficialis)</i>
18	Habb-ulAas	-do-	<i>(Myrtuscommunis)</i>
19	Halela	-do-	<i>(Terminaliachebula)</i>
20	Heel Kalan	-do-	<i>(Amomumsubulatum)</i>
21	Irsa	-do-	<i>(Iris ensata)</i>
22	Jadwar	-do-	<i>(Delphinium denudatum)</i>
23	Jaiphal	-do-	<i>(Myristicafragrans)</i>
24	Javitri	-do-	<i>(Myristicafragrans)</i>
25	Kahruba	-do-	<i>(Pinussuccinifera)</i>
26	Kalonji	-do-	<i>(Nigellia sativa)</i>
27	Karafs	-do-	<i>(Apiumgraveolans)</i>
28	Khulanjan	-do-	<i>(Alpiniagalanga)</i>
29	Khurma	-do-	<i>(Phoenix dactylifera)</i>
30	Kundur	-do-	<i>(Boswelliaserrata)</i>
31	Mastagi	-do-	<i>(Pistachialentiscus)</i>
32	Mur Makki	-do-	<i>(Commiphora myrrh)</i>
33	Mushk	Animal	<i>(Moschusmoschiferous)</i>
34	Nagar Motha	Plant	<i>(Cyperusrotundus)</i>
35	Nakhud	-do-	<i>(Cicerarietinum)</i>
36	Nankhwah	-do-	<i>(Trachyspermumammi)</i>
37	Naana	-do-	<i>(Menthaarvensis)</i>
38	Ood	-do-	<i>(Aquilariaagallocha)</i>
39	Pista	-do-	<i>(Pistaciavera)</i>
40	Qaranfal	-do-	<i>(Syzygiumaromaticum)</i>
41	Qust	-do-	<i>(Saussurealappa)</i>
42	Sandal	-do-	<i>(Santalum album)</i>
43	Seer	-do-	<i>(Allium sativum)</i>
44	Sumbul-ut-Teeb	-do-	<i>(Nardostachysjatamansi)</i>
45	Taj	-do-	<i>(Cinnamomum cassia)</i>
46	Turanj	-do-	<i>(Citrus medica)</i>
47	Unsul	-do-	<i>(Urgineascilla)</i>
48	Zafran	-do-	<i>(Crocus sativus)</i>
49	Zaitoon	-do-	<i>(Oleaeuropea)</i>
50	Zanjabeel	-do-	<i>(Zingiberofficialis)</i>
51	Zaranbad	-do-	<i>(Zingiberzerumbet)</i>
52	Zarnab	-do-	<i>(Taxusbaccata)</i>

**Table 1:** List of Drugs mentioned in Unani Literature for Geriatric Care.

### Honey

Honey contains many minor components with antioxidant activity, among which are amino acids and proteins, carotenes, phenolic compounds and flavonoids, ascorbic acid and organic acids. It has been proposed that the antioxidant capacity of honey is mainly due to the phenolic compounds and flavonoids they contain, and there is a

high correlation between polyphenols and antioxidant capacity of Honey [12].

### Elva (*Aloe barbadensis*)

There are many substances in Aloe that exhibit the antioxidant effects. The acting substances are the minerals, Manganese and Copper, vitamins B2, B6, C, and E, and the amino acid cysteine. Manganese is a powerful antioxidant that slows down the aging process and makes cells stronger in the fight against the negative effects of oxygen and broad spectrum radiation, to which we are exposed daily. It constitutes a part of the enzyme superoxide dismutase, an allied anti-free radical of the pancreas, liver and kidneys. Copper is an oligoelement essential to health. Also a strong antioxidant, Copper greatly limits the damaging effects of free radicals, mainly through the protein ceruloplasmin, which oxidizes the reduced form of iron responsible for the formation of free radicals. Through the enzyme superoxide dismutase, the copper element, which is one of its constituents, prevents rancidity of polyunsaturated fatty acids and keeps the cellular membranes strong.

Vitamin B12 actively takes part in complex cellular metabolic processes by being an indispensable regulator together with the enzyme glutathione reductase, as part of the process of maintaining stable levels of glutathione, a highly active anti-free radical. Riboflavin limits and inhibits, in part, the toxic byproducts of cellular respiration, a natural metabolic process which is highly oxidative. Vitamin B6 plays a role in the metabolism of the important essential amino acid, tryptophan, which is involved in protein synthesis and is a strong antioxidant. Vitamin C, another strong antioxidant, limits the damage caused by the oxidation of free radicals to the white blood cells. It is known that white blood cells are responsible for our immune defense, by which sickness or disease is overcome more easily. Vitamin E interacts in cellular energy production processes and is truly important to our health, especially during nervous system and immune system illnesses.

Cysteine is also a member of Aloe's antioxidant team. This non-essential amino acid is considered a guarantee to our health and longevity, by de-activating free radicals through its sulphurous function group, a good antioxidant, and, secondly, by protecting and strengthening cellular membranes from external attacks. Recent studies have demonstrated that cysteine, together with the B group of vitamins, can bind toxic molecules formed by disease processes and create inoffensive and harmless compounds [13].

### Conclusion

Exhaustive description on geriatric care is mentioned in Unani literature under the heading of TadabeereMashaikh. Under this section, various drugs are described like amla, Elwa, zafran, honey, kalonji etc. Some of the drugs studied in recent years demonstrate promising effect, which justify upto a large extent the anti-aging effect of drugs mentioned in unani literature.

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**Citation:** Itrat M, Khan JA (2014) Anti-Aging Drugs in Unani Medicine. J Community Med Health Educ 4: 275. doi:10.4172/2161-0711.1000275

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