



Anticancer, Antioxidant and Immunomodulator Ingredients of Halwa-i Gheekwar: A Review

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Abstract

Halwa-i Gheekwar (HG) is a polyherbal formulation used in various diseases for preventive and curative purposes. It is prepared by adding herbal drugs to the base (Qiwam) which contains sugar. The formulation has been described to possess aphrodisiac, nerve tonic and laxative properties and is used to treat joint pain, lumbago, cough and dyspnoea. Single drugs, used as ingredients of HG include *Withania somnifera*, *Elettaria cardamomum*, *Curcuma amada*, *Euryale ferox*, *Cinnamomum cassia*, *Orchis mascula*, *Alpinia galangal*, *Cinnamomum zeylanicum*, *Zingiber officinale*, *Asparagus racemosus*, *Syzygium aromaticum*, *Saussurea lappa*, *Celastrus paniculatus*, *Rubia cordifolia*, *Juglans regia*, *Prunus amygdalus*, *Cocos nucifera*, *Chlorophytum borivilianum*, *Aloe vera*, *Phoenix dactylifera*, etc., Cotemporary studies on these single drugs demonstrate their activities as anticancer, antioxidant and immunomodulator agents. This review article has discussed the medicinal importance of HG in the light of recent studies on its individual ingredients.

Keywords: Halwa; Free Radicals; Anticancer; Antioxidant; Immunomodulator

Introduction

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. Its uncontrolled spread may result in death. According to the information available with World Cancer Research Fund International there were an estimated 14.1 million cancer cases around the world in 2012, of these 7.4 million cases were in men and 6.7 million in women. This number is expected to increase to 24 million by 2035. Lung cancer was the most common cancer worldwide in men contributing nearly 12.3% of the total number of new cases diagnosed in 2018. The top three,

lung, prostate and colorectal cancers, contributed nearly 30.4% of all cancers (excluding non-melanoma skin cancer). Other common cancer contributing more than 5% was stomach. Breast cancer was the most common cancer worldwide in women contributing more than 12.3% of the total number of new cases diagnosed in 2018. Cervical cancer also contributed nearly 3.3% of all cancers (excluding non-melanoma skin cancer) [1].

In the last two decades, advances have been made in cancer treatment; however, the success rate still remains poor. Current

treatment choices are accompanied by adverse effects, drug resistance, and cancer recurrence. Therefore, there is always a scope for new therapeutic options.

In recent years, AYUSH systems including Unani System of Medicine (USM) has been gaining interest in the scientific community and a greater stress has been given towards the studies on traditional systems that deal with cancer management and help to overcome the side effects of conventional treatment including chemotherapy and radiotherapy.

The classical literature of USM describes the Cancer as Sartan and defines it as a painful, dark coloured, hard, Sawdawi (Melancholic) swelling [2] with many roots [3], affecting any organ (external/internal) of the body [4,5].

Unani physicians believe that cancer is caused by accumulation of Sawda (Black bile), produced due to Ihtiraq (burning/oxidation) of humours, in the body. This kind of black bile is known as Sawda Muhtaraq (Burnt/oxidized black bile) [2]. According to Ibn Sina, it is caused by the black bile, produced by burning/oxidation of yellow bile [6].

Razi has enlisted the causes of excessive production/accumulation of black bile in the body and these are, inability of spleen to absorb black bile, excessive heat in the liver and intake of diets helping in excessive production of *Dam Sawdawi* (Melancholic sanguine) [7].

The objectives of treatment with Unani drugs and regimens are:

- Prevention for those who are prone to cancer e.g. family history, melancholic temperament, lifestyle not in accordance with the prescribed rules (*Asbab Sitta Zarooriyya*).
- Treatment of cancer through various means such as evacuation of causative humour from the body, administration of *Muqawwiyat* (Tonics) i.e. antioxidant and immunomodulator drugs mentioned in Unani classical literature, etc.
- Reduction of side effects of chemotherapy or radiation therapy.

Cancer can be treated through evacuation of morbid matter from the body, making the consistency of sanguine thin [8], and extinguishing the increased heat of liver [9,10].

In addition, the present Unani physicians are also utilizing the unique approach of their System of Medicine to tone up the organs and the immune system which has shown much utility in improving the quality of life of patients suffering from chronic and some of the intractable diseases including Cancer. Many of the *Muqawwiyat* (Tonics) mentioned in Unani literature, possess antioxidant and immunomodulatory actions. These drugs when administered in single or compound form may serve as biological response modifiers by activating, increasing and restoring the reactivity of immunological effector mechanisms that are involved in resistance to tumor growth and metastasis and may assist in coping the oxidative stress responsible for many pathological conditions, including cancer.

The compound formulation Halwa-i Gheekwar is frequently used by Unani physicians for prophylactic and therapeutic purposes. It contains various single Unani drugs, which have been reported to possess anticancerous, antioxidant and immunomodulatory activities. Therefore, the oral administration of Halwa-i Gheekwar may play an important role in prevention and treatment of cancer. It may also help to reduce the side effects of chemotherapy or radiation therapy and improve the quality of life of cancer patients.

The studies carried out on different ingredients of Halwa-i Gheekwar are as follows:

S. No.	Ingredient	Activity	References
1	Asgand Nagori (<i>Withania somnifera</i> Dunal.)	Anticancer	[11]
		Antioxidant	[12]
		Immunomodulatory	[13]
2	Ilaichi Khurd (<i>Elettaria cardamomum</i> Maton.)	Anticancer	[14]
		Antioxidant	[15]
		Immunomodulatory	[16]
3	Amba Haldi (<i>Curcuma amada</i> Roxb.)	Anticancer	[17,18]
		Antioxidant	[19]
		Immunomodulatory	[20]
4	Talmakhana (<i>Euryale ferox</i> Salisb.)	Antioxidant	[21]
		Immunomodulatory	[22]
5	Taj (<i>Cinnamomum cassia</i> Blume)	Anticancer	[23]
		Antioxidant	[24]
		Immunomodulatory	[25]

6	Salab Misri (<i>Orchis mascula</i> Linn.)	Antioxidant	[26]
7	Khulanjan (<i>Alpinia galanga</i> Linn.)	Anticancer	[27]
		Antioxidant	[28]
		Immunomodulatory	[29]
8	Darchini (<i>Cinnamomum zeylanicum</i> Blunc.)	Anticancer	[30]
		Antioxidant	[31]
		Immunomodulatory	[32]
9	Zanjabeel (<i>Zingiber officinale</i> Rosc.)	Anticancer	[33]
		Antioxidant	[34]
		Immunomodulatory	[35]
10	Satawar (<i>Asparagus racemosus</i> Willd.)	Anticancer	[36]
		Antioxidant	[37]
		Immunomodulatory	[38]
11	Qaranful (<i>Syzygium aromaticum</i> Merr and L.M. Perry)	Anticancer	[39]
		Antioxidant	[40]
		Immunomodulatory	[41]
12	Qust Shireen (<i>Saussurea lappa</i> C.B Clarke)	Anticancer	[42]
		Antioxidant	[43]
		Immunomodulatory	[44]
13	Malkangni (<i>Celastrus peniculatus</i> Willd.)	Antioxidant	[45]
		Immunomodulatory	[46]
14	Majeeth (<i>Rubia cordifolia</i> Linn.)	Anticancer	[47]
		Antioxidant	[48]
		Immunomodulatory	[49]
15	Maghz Akhrot (<i>Juglans regia</i> Linn.)	Anticancer	[50]
		Antioxidant	[51]
16	Maghz Badam Shireen (<i>Prunus amygdalus</i> Batsch.)	Anticancer	[52]
		Antioxidant	[53]
		Immunomodulatory	[54]
17	Maghz Narjeel (<i>Cocos nucifera</i> Linn.)	Anticancer	[55]
		Antioxidant	[56]
		Immunomodulatory	[57]
18	Musli Safed (<i>Chlorophytum borivilianum</i> Baker.)	Anticancer	[58]
		Antioxidant	[59]
		Immunomodulatory	[60]
19	Musli Sainbal (<i>Bombax ceiba</i> Linn.)	Antioxidant	[61]
		Immunomodulatory	[62]

20	Gheekwar Sabz (<i>Aloe vera</i> Linn.)	Anticancer	[63]
		Antioxidant	[64]
		Immunomodulatory	[65]
21	Khajoor (<i>Phoenix dactylifera</i> Linn.)	Anticancer	[66]
		Antioxidant	[67]
		Immunomodulatory	[68]

Table

Conclusion

The compound formulation Halwa-i Gheekwar is frequently used by Unani physicians for prophylactic and therapeutic purposes. It contains various single Unani drugs, which have been reported to possess anticancerous, antioxidant and immunomodulatory activities. Therefore, the oral administration of Halwa-i Gheekwar may play an important role in prevention and treatment of cancer. It may also help to reduce the side effects of chemotherapy or radiation therapy and improve the quality of life of cancer patients.

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