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## An evidence based approach to the management of cervical cancer in unani system of medicine: A review

Tooba Fahad and Ismath Shameem

**Abstract**

Cervical cancer is the most common gynecologic malignancy worldwide. It is the leading cause of death among females, accounts for 8.5% deaths per year. Human papilloma virus is the major risk factor. In classical Unani text, cervical cancer (*sartan al- rahim*) is caused by *warame har* or *warame sub* of *rahim* and also due to dominance of *khilte sawda* (black bile), which is formed due to *ehtiraq* (detonation) of *khilte safra* (yellow bile). Clinical features are excessive tiredness, loss of appetite, foul smelling discharge per vaginum, pelvic pain, urinary symptoms, etc. Treatment options in conventional medicine include radical hysterectomy with pelvic lymph nodes dissection and concurrent chemo or radio therapy which have their own side effects like nausea, vomiting, loss of appetite and hair, early bruising and bleeding, anemia, renal problems, etc. Nowadays in spite of a number of interventions available, large number of patients suffers from poor prognosis. Therefore, the effort for finding new anticancer agents as an alternative with better efficacy and minimum side effects has been continued. Hence, there is a need for newer treatment which is to be safe, cost effective, easily available and free from side effects. The aim of this review paper is to provide evidence based analysis to Unani drugs having anti cancerous, activities in the treatment of cervical cancer. Moreover, this review article is focused to discuss how unani drugs and various food items act as anticancerous from scientific and medical point of view and how they are considered to be safe, effective and less expensive with virtually no side effects in the management of cervical cancer.

**Keywords:** *sartan al- rahim*, cervical cancer, anticancerous, unani medicine

**Introduction**

Cancer is a class of diseases characterized by uncontrolled cell growth, which can invade and spread to distant sites of the body. There are over 100 different types of cancer, and each is classified by the type of cell that is initially affected. Although it is a preventable disease, but can have severe health consequences, and is a leading cause of death worldwide<sup>[1]</sup>. Cervical cancer is the commonest gynecologic malignancy in females and ranked second after breast cancer<sup>[2]</sup>. It is one of the major causes of mortality in both developed and developing countries<sup>[3]</sup>. It accounts for 8.5% deaths per year most of which occur in developing countries. India beats about one fifth of the world's burden of cervical cancer<sup>[2]</sup>. According to recent report of WHO (Feb 2014), 8.2 million patients died from cancer in 2012. The primary cause of cervical pre-cancerous lesion is persistent or chronic infection with one or more of the "high-risk" (or oncogenic) types of human papillomavirus (HPV), which usually begin in the transformation zone. HPV is the most common infection acquired during sexual relations, usually with early sexual exposure. In most women and men who become infected with HPV, these infections will resolve spontaneously. A minority of HPV infections persists; in women may lead to cervical pre-cancer, which, if not treated, may progress to cancer in 10 to 20 years. Majority of death due to cervical cancer can be prevented through universal access to comprehensive cervical cancer prevention and control programme, which have the potential to reach all girls with HPV vaccination and all women who are at risk with screening and treatment for pre-cancerous lesion<sup>[1]</sup>. Nowadays inspite of a number of interventions available, large number of patients suffer from poor prognosis. Therefore, the effort for finding new anticancer agents with better efficacy and minimum side effects has been continued<sup>[3]</sup>.

**Historical background**

The word cancer is derived from Greek word crab. Its first description was based on breast cancer where exterior surface was compared to the crabs shell, and swollen veins were likened to the legs. The pain of cancer resembled sharp claws penetrating the body. Hippocrates described a variety of cancer conditioned which was cauterized or excised when accessible.

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Based on their concept of humoral physiology, the Greeks believed that cancer was caused by accumulation of black bile, the melancholic humor. Galen further popularized the humoral theory, according to which black bile alone could produce cancer directly. In 18<sup>th</sup> century, cancer was considered as unfavorable outcome of inflammation. The first reference to cancer of uterus appears in the Edwin Smith papyrus c.1700 BC. Hippocrates (460-377 BC) was aware of cancer and mentioned that when disease was well advanced it was incurable. Galen described cancer of the uterus in his *De Morbis Mulierum* and was aware of bad prognosis [4]. Abulcasis was the first to conduct classic removal of breast cancer. He recognized that cancer can be treated surgically, if diagnosed in early stage when complete removal is possible [5].

## Methods

Authentic ancient text of Unani medicine was searched to obtain the Unani concept of cervical cancer. Pub Med/Google Scholar was also searched with the keywords; Herbal anti cancerous drugs, food items as anticancerous, Unani drugs for cancer having cytotoxic effects, alternative regimes for cervical cancer, prevention of cervical cancer etc.

## Unani concept

In classical Unani text, cancer (*sartan*) is an arabic word which means crab, as it sticks to its prey like a crab. *Sartan* has been defined as a type of malignant and melanotic swelling which can occur anywhere in the body [6]. The description of cancer in the Unani system of medicine can be traced back to ancient times (131-200AD) [7]. *Jalinoos* was the first to describe tumors including cancer, in a systematic way. He approved *Buqraat* basic theory of cancer, who mentioned excess of black bile as the cause of cancer [6]. *Ibn Sina* and *Razi* described most types of cancers known at their time and suggested several treatments based on their belief that cancer is the result of excess of burned black bile in the affected tissue [5]. *Razi* quoted cancer as serious disease in *Kitabul Mansoori* [5]. *Ibn Sina* described cancer as black bile swelling caused by accumulation of excess black bile produced from detonation of yellow bile (*mirrae sawda*) [8].

**Cervical cancer:** The description of cervical cancer (*sartan al-rahim*) are mentioned in classical Unani texts: *Kamilus Sana*, *Tibbe Akbari*, *Zakheera khwarzum shahi*, *Al Akseer*, *Al Hawi*, *Al Qanoon*, *Kitabul mukhtarar fil tib* (IV) etc. *Razi* mentioned in *Al Hawi* that *sartan* is *warame sulb* of *rahim*, its root are stony hard, reddish in color; when it occurs on cervix is associated with severe pain in lower abdomen and back and is difficult to palpate on examination and the lesion may be ulcerated or non ulcerated [8].

**Etiopathogenesis:** *Sartan* mostly occurs in soft organs like breast, uterus, testis, prostate, lungs, stomach, pancreas, oral cavity etc [7]. *Ibn Sina* states that *sartan* is a tumor arising from burning of *khilte sawda*, means increase of innate heat and thus it becomes pathological [7].

Causes of cervical cancer is either *warame haar* [9] (*waram falghamooni*) [10] or *warame sulb* of *rahim* [11] or accumulation of *khilte sawda* [12].

**Clinical features:** In initial stages -the patient may present with complain of excessive tiredness, loss of appetite,

amenorrhea, distension of abdomen (differentiated from pseudo pregnancy) [12].

In advanced stage- the disease is associated with *istisqa* (ascitis) and *rataq* (cervical stenosis) [9].

If it is visible: On examination- cervix appear as reddish or grayish or greenish or blackish in color with suspicious growth having irregular margins with prominent vessels [11, 13] which is painful [13] and stony hard [12, 13] on palpation.

If it is invisible: Patient may present with giddiness, severe pricking pain [12, 13] in pelvis radiating towards inguinal region, seldom the pain radiates towards chest and back [8, 9, 12].

Associated features: Pain in eyes [9, 12, 14] and temporal region, [11-13] migraine, excessive tiredness [12] cold extremities [11, 15] excessive perspiration [13, 15] low grade fever which becomes high grade with severity of pain, [11, 12] dysuria, dribbling of urine, [9, 11] urinary [12] and fecal retention [11] cramps in calf muscles, low backache etc [12].

If *sartan* is *mutaqarrah* (ulcerated): Severe pain in pelvic and inguinal regions [9, 13] offensive and purulent discharge per vaginum, watery in consistency, which is either blackish, reddish and greenish in color [9, 10, 12-14].

If *sartan* is not *mutaqarrah* (non-ulcerated): Severe pain in pelvic region and lump is hard, palpable on examination [12].

If *sartan* is infected: Offensive discharge per vaginum.

Rest of the complications of *warame haar rahim* arises and complete cure is impossible [8].

**Usoole ilaj and ilaj:** The principles of treatment of *sartan* in Unani medicine is mainly emphasized on to prevent the collection of *sawda* via

- Venesection (*fasd*) of *rage basaleeq* followed by *rage safin*, [11].
- Use of *mushilate sawda* (melanagogue drugs) for excretion of *sawda*, [11, 12].
- Use *mulayan* (Laxative) [9, 16] and *muhallil* (anti-inflammatory) drugs [9] to resolve inflammation [16].
- Use of some dietary regimen [7] for *tarteebe badan*, [12, 13].
- Local use of *musakkinat* (analgesics) and *mukhaddirat* (sedatives) to relief severe pain [11, 13].

Moreover, cancer is difficult to treat but further progression can be prevented by providing relief in its symptoms [9, 10]

## 1. Dietotherapy (*Ilaj bil ghiza*)

Diet restricted	Diet allowed
<ul style="list-style-type: none"> <li>▪ Hot and spicy food items [9, 14]</li> <li>▪ Food items that produce <i>sawda</i> like</li> <li>▪ <i>Masoor</i> (red lentils)               <ul style="list-style-type: none"> <li>▪ Brinjal</li> <li>▪ <i>Qambeet</i> (karamkallaa) [14]</li> <li>▪ Cow's meat</li> </ul> </li> <li>▪ Black &amp; concentrated alcohol [9, 10, 15]</li> </ul>	<p><i>Jayyidul kaimoos</i> (nutritious) &amp; <i>sareeul hazm</i> (easily digestible) diet like:</p> <ul style="list-style-type: none"> <li>▪ Chicken [15]</li> <li>▪ Soft meat [17] like meat of bird &amp; lamb [10, 15]</li> <li>▪ Chapati of wheat flour</li> <li>▪ <i>Bathuwa</i> (variety of spinach)</li> <li>▪ <i>Palak</i> (spinach)</li> <li>▪ <i>Chuqandar</i> (beetroot)</li> <li>▪ <i>Angoor</i> (grapes)</li> <li>▪ <i>Injeer</i>(fig)</li> <li>▪ <i>Badam</i> (almond) [10, 17]</li> <li>▪ <i>Aalu bukhara</i> and other fruits [12, 13]</li> <li>▪ <i>Sharabe rehani</i> (alcohol of <i>tulsi</i>) [15]</li> <li>▪ Soup of <i>baqoolate barida</i> (cold vegetables) [12, 13]</li> </ul>

**Evidence based food items having anticancerous effect**

S. No	Food	Scientific name	Chemical constituents	Pharmacological Actions	References
1.	Garlic	<i>Allium sativum</i>	Volatile oil, organo sulphur compounds like ajeone, alliin, alliin etc.; enzymes like peroxidase, allinase, myrosinase	Antidiabetic, antimicrobial, anticancerous, anti-hypertensive, anti-thrombotic, hypolipidemic.	[18-19]
2.	Turmeric	<i>Curcuma longa</i>	Curcuminoids: curcumin demethoxy curcumin, bisdemethoxycurcumin Phenolic acids	Antiinflammatory, antioxidant, anticancerous, hepatoprotective, cardioprotective, thrombosuppressive, anti-arthritis	[20-22]
3.	Ginger	<i>Zingiber officinalis</i>	Volatile oil (zingiberol, zingiberine),	Induction of apoptosis, Antiproliferation, potent antioxidant, androgenic, anti ulcerogenic, antiinflammatory, hypolipidaemic.	[23-25]
4.	Grapes	<i>Vitis vinifera</i>	Phenols, tannins, lignans, flavonoids, carotenoids, terpenoids	Anti-cancerous	[26-28]
5.	Beetroot	<i>Beta vulgaris</i>	Carotenoids, saponins, folate, polyphenols, flavonoids, trans fatty acids, beta cyanins.	Anti-cancerous, antioxidant, antimicrobial	[29-30]
6.	Plum	<i>Prunus salicina</i>	Polyphenolic compounds, carbohydrates, fat, proteins, minerals, carotenoids, vitamin B	Cytotoxic, antioxidant	[31-32]
7.	Cabbage	<i>Brassica oleracea</i>	Beta carotene, Indole3Carbinole, omega 3 fatty acids	Anti cancerous, potent antioxidant	[33]
8.	Red cabbage	<i>Brassica oleracea</i>	Anthocyanins	Powerful anticancer, anti inflammatory,	[33]
9.	Aloe vera juice	<i>Aloe barbedensis</i>	Vitamins, amino acids,	anticancerous	[33]
10.	Saffron	<i>Crocus sativus</i>	Crocetin	anticancerous	[34]
11.	Green tea	<i>Camellia sinensis</i>	Epigallocatechin 3-gallate (EGCG a major catechin, polyphenols	anticancerous	[23, 34, 35]
12.	wheat	<i>Triticum aestivum</i>	Proteins, fiber, essential vitamins, cellulosic polysaccharides	Anticancerous, cardioprotective, antidiabetic, gastroprotective, immuno modulatory	[36-38]
13.	Rye	<i>Secale cereale</i>	Dietary fiber, lignans, cellulosic polysaccharides phytosterols	Anticancerous, cardioprotective, antidiabetic gastroprotective, immuno modulatory	[37]
14.	Pulses & legumes (alfalfa, clover, peas, beans, lentils, lupines, soy, peanuts)		Fat, protein, dietary fiber, micronutrients, phytochemicals, isoflavones	Antioxidant, anti cancerous	[34]
15.	Fruits & vegetables		Vitamins, minerals, salicylates, flavonoids, glucosinolates, terpenes, lignans, isoflavones: B-carotene, Vit. C	Anticancerous, antioxidants	[34]

### Food factors which prevent cervical cancer

S. No.	Food factors	Food items	References
1.	Vitamin C	Papaya, Kiwi, pepper, orange, broccoli, brussels, sprouts, grape fruit, straw berries	[3, 90]
2.	Selenium	Brazil nuts, fish, barley, shrimp, lamb, scallops	[39]
3.	Vitamin E	Sunflower seeds, almonds, spinach, turnip green, papaya, mustard, asparagus.	[34, 39]
4.	Carotenoids	Carrots, tomatoes, sweet potato, pumpkin, spinach.	[34, 39]
5.	Essential fatty acids (EFAs)	Pure fish oil, flax seed oil	[34, 39]
6.	Folate	Lentils, spinach, beans, asparagus	[40]

### 2. Pharmacotherapy (*Ilaj bil dawa*)

Drug administration	Unani formulations with ingredients	Indications
<b>ORAL</b>		
<b>Oral</b>	<i>Joshande Aftimoon (Cuscuta reflexa)</i> [9,16]	As purgative of black bile
<b>Oral</b>	<b>Decoction:</b> <ul style="list-style-type: none"> <li>• <i>Unnab (Zizyphus sativa)</i></li> <li>• <i>Sapistan (Cordia latifolia)</i></li> </ul>	To relieve pain due to cancer

	<ul style="list-style-type: none"> <li>• <i>Maghz fuloos khayar shambar (Cassia fistula)</i></li> <li>• <i>Roghane badam sheerin (Prunus amygdalus)</i> [9]</li> </ul>	
<b>Oral</b>	<i>Jaosheer (Ferula galbaniflua)</i> mixed with honey [8]	
<b>Local</b>		
<b>Humool (Tampon)</b>	<b>Marham dakhilyun</b> (Compound formulation) [9, 11, 12, 15, 41] <ul style="list-style-type: none"> <li>• <i>Murdar sang</i> (Lead oxide) -72g</li> <li>• <i>Roghane zaitoon</i> (Olive oil) -44g</li> <li>• <i>Tukhme katan (Linum usitatissimum)</i> -24g</li> <li>• <i>Tukhme kanoocha (Salvia spinosa)</i> -24g</li> <li>• <i>Tukhme hulba (Trigonella foenum)</i> -24g</li> <li>• <i>Tukhme khatmi (Althaea officinalis)</i> -24g</li> <li>• <i>Isapghol (Plantago ovata)</i> -24g</li> </ul>	To resolve <i>aurame sulb</i> and to relieve pain
<b>Humool</b>	<b>Marham risl</b> (Compound formulation) [9, 11-13, 41] <ul style="list-style-type: none"> <li>• <i>Jaosheer (Ferula galbaniflua)</i> -7g</li> <li>• <i>Zangar</i> (Copper disulphate) -7g</li> <li>• <i>Behroza (Pinus longifolia)</i> -7g</li> <li>• <i>Murrmakki (Commiphora myrrha)</i> -7g</li> <li>• <i>Kundur (Boswalia serrata)</i> -10.5g</li> <li>• <i>Zarawand taweel (Aristolochia longa)</i> -10.5g</li> <li>• <i>Muqil (Commiphora mukul)</i> -14g</li> <li>• <i>Murdarsang</i> (Lead oxide) -15.75g</li> <li>• <i>Ushq (Dorema ammoniacum)</i> -24.5g</li> <li>• <i>Mom safed</i> (Bees wax) - 97g</li> <li>• <i>Rateenaj</i> (Resin) -97g</li> <li>• <i>Roghan zaitoon</i> (Olive oil) -750g</li> </ul>	To resolve <i>aurame sulb</i> & cancer, relieve severe pain, help in wound healing and tissue re-epithelization
<b>Humool</b>	<b>Shayafe abyaz</b> (Compound formulation) [9, 10, 13, 15] <ul style="list-style-type: none"> <li>• <i>Nashasta</i> (Starch) -4g</li> <li>• <i>Safeda kashghari</i> (Lead carbonate) -72 g</li> <li>• <i>Anzaroot (Astragalus sarcocola)</i> -42g</li> <li>• <i>Samagh arabi (Acacia arabica)</i> -36 g</li> <li>• <i>Samaghe kateera (Sterculia urenus)</i> -24g</li> <li>• <i>Afyun (Papaver somniferum)</i> -7g</li> </ul>	Do
<b>Humool</b>	<ul style="list-style-type: none"> <li>• <i>Marham dakhilyun</i> (compound formulation)</li> <li>• <i>Muqil (Commiphora mukul)</i></li> <li>• <i>Roghane babuna (Anthemis nobilis)</i></li> <li>• <i>Charbie bat</i> (duck fat) [9, 41]</li> </ul>	To resolve cancer swelling
<b>Humool</b>	Prepared by dissolving <i>lazan (cisticretieus resina)</i> in <i>charbi murghabi</i> (duck fat) [12]	It is beneficial to relieve the pain of cancer
<b>Humool</b>	<i>Barid luab</i> [9, 16] like <i>luab isapghol</i> [9]	To relieve pain of cancer
<b>Humool</b>	<ul style="list-style-type: none"> <li>• <i>Safeda</i> (Lead carbonate)</li> <li>• <i>Gile armani (Armeniae rubra)</i></li> <li>• <i>Aqaqia (Acacia arabica)</i></li> </ul>	To arrest bleeding from the uterus
<b>Abzan (Sitz bath)</b>	<b>Decoction</b> <ul style="list-style-type: none"> <li>• <i>Barge karnab (Brassica oleracea)</i></li> <li>• <i>Banafsha (Viola odorata)</i></li> <li>• <i>Tukhme katan (Linum usitatissimum)</i> [9, 41]</li> <li>• <i>Hulba/Methi (Trigonella foenum)</i></li> <li>• <i>Babuna (Anthemis nobilis)</i> [41]</li> <li>• <i>Barge khatmi (Althaea officinalis)</i> [9]</li> </ul>	To resolve cancer swelling and for healing of cancer which is ulcerated
<b>Abzan</b>	<b>Decoction</b> <ul style="list-style-type: none"> <li>• <i>Khatmi (Althaea officinalis)</i></li> <li>• <i>Hulba/Methi (Trigonella fienum)</i> [8, 10]</li> <li>• <i>Alsi (Iris insata)</i></li> <li>• <i>Nakhuna (Trigonella uncata)</i> [8]</li> </ul>	To resolve cancer swelling and to relieve cancer pain
<b>Abzan</b>	<b>Decoction: Khashkhash (Papaver somniferum)</b> <ul style="list-style-type: none"> <li>• <i>Dhaniya</i> (Coriander)</li> <li>• <i>Aabe sadabahar (Catharanthus roseus)</i></li> <li>• <i>Roghane gul</i> (Rose oil) [13]</li> </ul>	To relieve cancer pain
<b>Abzan</b>	<b>Decoction:</b> <ul style="list-style-type: none"> <li>• <i>Khubbazi (Malva sylvestirs)</i></li> <li>• <i>Hulba/Methi (Trigonella fienum)</i> [8]</li> </ul>	Do
<b>Humool</b>	<ul style="list-style-type: none"> <li>• <i>Murrmaki (Commiphora myrrha)</i></li> <li>• <i>Safeda</i> (Lead carbonate)</li> <li>• <i>Anzaroot (Astragalus sarcocola)</i></li> <li>• <i>Mom</i> (bees wax)</li> <li>• <i>Roghane gul</i> (Rose oil) [11]</li> </ul>	For healing of uterine ulcer This formulation may be useful in cervical cancer, as preliminary study shows that it was effective in healing of uterine ulcer.

<b>Zimad (Ointment)</b>	<ul style="list-style-type: none"> <li>Residue left in utensils after boiling water in it is taken and grinded, mix rose oil and beeswax to prepare ointment and applied externally over the uterus. [10]</li> </ul>	To resolve cancer swelling
<b>Zimad</b>	<ul style="list-style-type: none"> <li><i>Tamar heroon</i> (stork)</li> <li>Egg yolk</li> <li><i>Roghane banafsha</i> (<i>Viola odorata</i>)</li> <li><i>Khatmi</i> (<i>Althaea officinalis</i>)</li> <li><i>Aarade jau</i> (Barley)</li> <li><i>Luabe als</i> (<i>Linum ussitatissimum</i>)</li> <li><i>Luabe methi</i> (Fenugreek) [10]</li> </ul>	To relieve pain
<b>Zimad</b>	<ul style="list-style-type: none"> <li><i>Chaulaie</i> (Lettuce)</li> <li><i>Khatmi taza</i> (<i>Althaea officinalis</i>)</li> <li><i>Ma'al asl</i> (Honey water)</li> <li><i>Roghane gul</i> (Rose oil) [10]</li> </ul>	To relieve pain
<b>Zimad</b>	<ul style="list-style-type: none"> <li><i>Khashkhash taza</i> (<i>Papaver somniferum</i>)</li> <li><i>Kishneez taza</i> (<i>Coriandrum sativum</i>)</li> <li><i>Mako taza</i> (<i>Solanum nigrum</i>)</li> <li><i>Chaulaie</i> (Lettuce)</li> <li><i>Roghane gul</i> (Rose oil) [10]</li> </ul>	To relieve pain
<b>Zimad</b>	<ul style="list-style-type: none"> <li><i>Kishneez</i> (<i>Coriandrum sativum</i>)</li> <li><i>Khashkhash taza</i> (<i>Papaver somniferum</i>)</li> <li><i>Mako taza</i> (<i>Solanum nigrum</i>)</li> <li><i>Roghane gul</i> (Rose oil)</li> <li>Egg white [11]</li> </ul>	To relieve pain
<b>Huqna (Suppository)</b>	<ul style="list-style-type: none"> <li><i>Usarae lahiyyatuttees</i> (<i>Ficus bengalensis</i>)</li> <li><i>Gile armani</i> (<i>Armeniae rubra</i>)</li> <li><i>Safeda</i> (Lead carbonate)</li> <li><i>Aabe bartang</i> (<i>Plantago lanceolata</i>) [10]</li> </ul>	To arrest bleeding from the uterus

### Regimetal Therapy (Ilaj Bil Tadbeer)

- Venesection (*fasd*) of basilic vein [8, 9, 10, 12, 15] or saphenous vein. [8, 12]
- Venesection / phlebotomy is the generalized elimination of humors. It removes the excess of humors in the same proportion, as it is present in blood vessels. It is usually carried out when there is excess of blood in the body and patient is either exposed to the risk of developing a disease or has actually developed it. In both the conditions, the aim is to remove either the excess or abnormal humor or both. It is beneficial in detoxifying

the body, as it draws blood away from the viscera as well as removes morbid matter from the body, thus it cleanses the body.

- Venesection of leg veins are especially useful in diseases caused by *sawda*.
- Venesection of basilic vein is indicated in *waram al-rahim* (PID) and saphenous vein in *ehtebase tams* (amenorrhea) to induce menstruation as it diverts the flow of blood from upper to lower organs [42]

### Evidence based medicines for cervical cancer

S.No	Drug	Botanical name	Chemical constituents	Pharmacological actions	References
1.	<i>Murr makki</i>	<i>Commiphora myrrha</i>	Volatile oil, resin, gum, alkaloids, phenol, tannins, flavonoids, glycosides, steroids, saponins, terpenoids, carbohydrates, organic compounds & minerals.	Antiseptic, antifungal, antibacterial, cytotoxic, analgesic, antiviral, anti-inflammatory, bacteriostatic, astringent, expectorant, carminative, stimulant, stomachic, leucocytogenic, aphrodisiac, diuretic, deodorant, ophthalmic, antispasmodic, anti dermatophyte.	[43-48]
2.	<i>Safeda Kashghari</i>	<i>Plumbi carbonas</i>		Antispasmodic, anticancer, seminal stimulant; locally as sedative, astringent, anaesthetic, haemostatic.	[49]
3.	<i>Anzaroot</i>	<i>Astragalus sarcocolla</i> Dymock	Saponins, flavonoids, polysaccharides, alkaloids, anthraquinones, amino acid, beta sitosterol & metallic elements.	Gum: Anti-inflammatory, antiviral, bactericidal, anti diabetic, antioxidant, cardio protective, hepatoprotective, antidepressant, hypotensive, sedative, wound healing, immunomodulatory, aperient, emollient, anti-rheumatic, anti helminthic, laxative, cardio tonic. Roots of genus exhibit anti perspirant, tonic, diuretic and wound healing properties.	[50-51]
4.	<i>Mom</i>	<i>Cera alba</i> (white bees wax) <i>Cera flava</i> (yellow bees wax)	Myricin, free fatty acids, myricylstearate, cerolin, cerylalcohol, hydrocarbons, lactones, cholesterol esters, pollen pigments, flavonoids, palmitate, palmitoleate & oleate esters of long chain aliphatic alcohol.	Antifungal, antiulcer, antioxidant, anti-inflammatory, antimicrobial, anti stress, gastroprotective.	[52-55]

5.	<i>Roghane gul</i> (Rose oil)	<i>Gulesurkhtaza</i> (Flower of <i>Rosa damascena</i> Mill.) <i>Roghane kunjad muqashshar</i> (Oil of <i>Sesamum indicum</i> L.)	Terpenes, glycosides, flavonoids, nerolanthocyanins, nonadecane, beta citronellol, geraniol, carbohydrates.	Antibacterial, antifungal, anti infective, antiinflammatory, wound healing, analgesic, hypnotic, anti depressant, anti anxiety, anti convulsant, antispasmodic, cytotoxic, astringent, disinfectant, hypotensive, tonic.	[56-59]
6.	<i>Babuna</i>	<i>Anthemis nobilis</i> (Chamomile)	Water, volatile oils, sesquiterpenes, steroids, flavonoids, alcohol, coumarines, phenolic acids, triterpenes, polysaccharides.	Antimicrobial, cytotoxic, antiinflammatory, insecticidal, hypotensive, hypoglycemic, nervous effect, antioxidant.	[60]
7.	<i>Hulba</i>	<i>Trigonella foenum</i>	Diosgenin, Flavonoids (Amurensin, cosmosiin),	Anti cancerous	[61-62]
8.	<i>Sada bahaar</i>	<i>Cantharanths roseus</i>	Vinka alkaloids (Vinblastine, vincristine, vinorelbine, vindesine)	Anticancerous (hodgkins and non hodgkins lymphoma, testicular carcinoma, breast carcinoma, cervical carcinoma, kaposi sarcoma, bladder carcinoma, mouth and neck carcinoma).	[5, 38, 63]
9.	<i>Zaitoon</i>	<i>Olea europea</i>	Oleuropein (coumarin like compound), biophenols, flavonoids, pentacyclic, triterpenes, MUFAs, PUFAs	Antioxidant, anticancerous, anti inflammatory, anti viral, anti diabetic, anti convulsant, antibacterial.	[64-67]
10.	<i>Alsi</i>	<i>Linum usitatissim</i>	MUFAs, PUFAs, soluble & insoluble fibres, lignans, phenylpropanoids, proteins, terpenoids, coumaric acid, tocopherol, beta carotene, isoflavonones.	Cytotoxic, antioxidant, anti inflammatory, anti bacterial	[68-71]
11.	<i>Kanocha</i>	<i>Salvia spinosa</i>	Essential oil, alpha terpenolene, beta bourbonene, thymol, germacreneol,	Anti microbial, anti oxidant, antibacterial, anti diabetic, antitumor, anti inflammatory.	[72-73]
12.	<i>Khatmi</i>	<i>Althaea officinalis</i>	Phenolic acid, flavonoids, pectin, starch, coumarins, mucilage, glycosides, tannin, phytosterol, amino acids	Cytotoxic, anti inflammatory, hypoglycemic, antioxidant, immune stimulant, antimicrobial.	[74-76]
13.	<i>Isapghol</i>	<i>Plantago ovata</i>	Mucilaginous polysaccharides, proteins, lipids, sterols, triterpenes, linoleic acid, oleic acid, luteolin, beta sitosterol, palmitic acid, glucose, sucrose, campesterol, phenols, flavonoids.	Antimutagenic, antiinflammatory, antioxidant, cytotoxic, laxative, hematopoietic, hepatoprotective.	[77-79]
15.	<i>Aqaqia</i>	<i>Acacia arabica</i>	Tannins, gallic acid, galactone, digallic acid	Haemostatic, antiulcer, anti diabetic, antibacterial, antiviral	[80-82]
16.	<i>karnab</i>	( <i>Brassica oleracea</i> )	Polyphenols, flavonoids, glucosinolates, Vit.C, flavones, isoflavone, anthocyanin, catechin & isocatechin.	Antioxidant, anticancer	[83-85]
16.	<i>Kishneez</i>	<i>Coriandrum sativum</i>	Lipids, sterols, tocopherol, essential oil, monoterpenes, polyphenols, flavonoids.	Antimicrobial, antioxidant, analgesic hypoglycemic, anticancer, anti inflammatory,	[86]
18	<i>Mako</i>	<i>Solanum nigrum</i>	Polysaccharides	Anti proliferation Induction of apoptosis	[87]
19	<i>Kalonji</i>	<i>Nigella sativa</i>	Benzoquinones	Immune-modulatory Anti proliferation Induction of apoptosis	[87]
20	<i>Zafran</i>	<i>Crocus sativus</i>	Terpenes, terpene alcohols & their esters	Anti proliferation Induction of apoptosis	[87]
21	<i>Amaltas</i>	<i>Cassia fistula</i>	Tannins, flavonoids, glycosides, carbohydrates, linoleic, oleic acids, amino acids	Anticancerous, hepatoprotective, antipyretic, antioxidant, laxative, anti inflammatory, anti diabetic, anti epileptic, hypolipidemic, antimicrobial	[88-89]
22	<i>Afsanteen</i>	<i>Artemisia absinthium</i>	Caryophyllene oxide, p-cymene, 1,8-cineole, lanceol acetate	Cytotoxic	[5]
23	<i>Aftimoon</i>	<i>Cuscta reflexa</i>	Flavonoids, coumarines, glycosides	Cytotoxic, anti inflammatory	[5]
24	<i>Amla</i>	<i>Emblica officinalis</i>	Ellagic acid, gallic acid, quercetin, kaempferol, tannins flavonoids, glycosides,	Anti metastatic, antioxidant	[5, 25, 90]
25	<i>Asgand</i>	<i>Withania somnifera</i>	Withanolides, withaferin	Cytotoxic, anti oxidant, anti stress, immuno modulatory, anti ageing	[5, 23, 89, 91]
26	<i>Aslusoo</i>	<i>Glycyrrhiza glabra</i>	Flavonoids, glycyrrhizin	Cytotoxic, antioxidant, hepatoprotective	[5, 23, 38, 91]
27	<i>Biladur</i>	<i>Semicarpus</i>	Catechol	Cytotoxic	[5]

		<i>anacardium</i>			
28	<i>Gilo</i>	<i>Tinospora cordifolia</i>	Palmatine	Anticancerous,	[5]
29	<i>Gule nilofar</i>	<i>Nymphaea alba</i> Linn.	Polyphenolic compounds, alkaloids	Antitumour, antioxidant, hepatoprotective	[5]
30	<i>Sibr zard</i>	<i>Aloe barbadensis</i>	Aloe-emodin, nemodin, aloin	Anticancerous, anti oxidant, immunomodulatory	[5, 23, 91]
31	<i>Zarishk</i>	<i>Berberis aristata</i> Linn.	Tannins, saponins, alkaloids, flavonoids	Antineoplastic	[5]
32	<i>Kalonji</i>	<i>Nigella sativa</i>	Thymoquinone, Amino acids, proteins, alkaloids, saponins, carbohydrates, volatile oil	Antitumor, immuno enhancing, anti inflammatory	[23,92]
33	<i>Rumman</i>	<i>Punica granatum</i>	Tannin, ellagic acid, punicic acid, flavonoids, anthocyanidin, estrogenic flavonols, flavones	anti inflammatory, Anticarcinogenic, anti oxidant, cardioprotective, anti diabetic,	[92]
34	<i>Neem</i>	<i>Azadirachta indica</i>	Limonoids (Azadirachtin)	anti inflammatory, Antiulcer, anti oxidant, hepatoprotective, anti cancer, antimetastatic	[92]
35	<i>Qust</i>	<i>Saussurea lappa</i>	Sesquiterpenes	Anti cancer, induces apoptosis, arrests cancer cell division in G2 phase	[92]
36	<i>Madaar</i>	<i>Calotropis procera</i>	Cardenolides, flavonoids, saponins, glycosides.	Strong cytotoxic	[92]

### Conclusion

Cervical cancer is the 2<sup>nd</sup> most common gynecologic malignancy in women and it is one of the major causes of mortality in both developed and developing countries, accounting for 8.5% deaths per year. The primary cause of cervical pre-cancer and cancer is persistent or chronic infection with one or more of the “high-risk” types of human papillomavirus. In Unani system of medicine, cervical cancer (*sartane rahim*) is caused mainly by *warame har* or *subl* of *rahim* and accumulation of *khilte sawda*. Clinically patient may present with excessive tiredness, loss of appetite, foul smelling offensive discharge per vaginum, amenorrhea, urinary symptoms etc. Recent treatment includes radical hysterectomy with pelvic node dissection or concurrent chemo radiation therapy (CCRT) but have their own side effects like nausea, vomiting, hair loss, early bruising and bleeding, anemia, appetite changes, numbness and tingling, renal problems, etc. Present review focuses on experimental studies conducted on animals has confirmed the anti cancerous activity of Unani drugs along with other pharmacological actions like anti oxidant, analgesic, anti inflammatory, anti metastatic, etc. due to the presence of flavonoids, phenols, lignans, polysaccharides, etc but clinical studies are lacking behind. However, there are many limitations and ethical issues regarding the safety and efficacy of these drugs to be used in human beings. Hence, there is need for further clinical studies to establish the efficacy & safety of these drugs. Therefore, phase II trials in patients with precancerous lesion on cervix are needed to explore pharmacological activities of these drugs. Once, the efficacy of Unani drugs has been proved, further well designed randomized controlled trials on large sample size at multicentre are recommended to provide an effective alternative in patients with cervical cancer.

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