International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Ali M et al. Int J Reprod Contracept Obstet Gynecol. 2025 Jun;14(6):2044-2048
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20251611

Review Article

Unani contraceptives: a substitute for contemporary unmet

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Received: 05 March 2025
Accepted: 07 April 2025

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ABSTRACT

The means of preventing unintended pregnancies are birth control and contraception. Today's advancements had given hundreds of contraceptives, giving people options but the primary reason that is unfulfilled, with the related adverse effects being the main concern. None satisfy the people's needs to the required extent. Therefore, it is imperative that we investigate and identify fertility-regulating drugs that are less expensive, universally accepted, safer and more effective in order to meet the millennium development goal and improve maternal health, the World Health Organization put efforts on the promotion of family planning. effective contraception is thought to be able to prevent 90% of abortion-related morbidity and mortality as well as 20% of pregnancy related morbidity and mortality. Research on more advanced, totally reversible, self-administered, less toxic, less costly contraceptives is therefore necessary. Many of these characteristics are found in contraceptives, as the traditional Unani scripture mentions. Unani physician has discussed the many contraceptive methods and medications. The effectiveness of many herbal medicines such as Suddab (Ruta graveolans), Abhal (*Juniperus communis*), Filfil daraz (*Piper longum*), Pudina (*Mentha arvensis*), Neem (*Azadirachta indica*), Anar (*Punica granatum*), Piyaz (*Alium cepa*) and wild carrot (*Daucus carota*) has been supported by scientific studies. Therefore, this article aims to examine the traditional Unani System of Medicine's approach to contraception in the context of existing scientific research.

Keywords: Contraceptive, Morbidity, Mortality

INTRODUCTION

Breast cancer (BC) is the most common type of cancer in women around the world. It disrupts the function of breast tissue by damaging its normal structure due to tumour formation.[1] Regardless of their racial or ethnic origin, all women are at risk of developing BC and it is the most diagnosed cancer in the world among them.[2] Every year BC leads to the deaths of thousands of women which affects the countries at all the stages of modernity.[3] According to the World Health Organization (WHO), in 2022, 2.3 million women were diagnosed with BC and 6.7 lakhs died of it globally. Also, BC occurs in every country of the world among women and can occur at any age after they hit puberty with more incidence in later life.[4] As per the Globocan 2022 data, in India, BC accounted for 26.6% (192020) of all cancer cases among females and 10.7% of all cancer deaths.[5]

India is among the world's most populous nations. which currently has 17.5% of the world's population, is expected to overtake China as the most populous nation by 2030. Controlling fertility is a problem for both national and international public health. Fertility control is an issue of global and national public health concern.[2] Contraception refers to a method or procedure for preventing conception through the use of drugs, devices or other techniques that obstruct one or more reproductive processes so that a sexual relationship can take place without conception. An approximate of 222 million women in developing nations desire to postpone or terminate their pregnancies, but they don't use any form of contraception. It is estimated that meeting the unmet need for family planning alone could

cut the number of maternal deaths by almost a third. The achievement of the millennium development targets, particularly those that deal with gender equality, HIV/AIDS, maternal health, and child mortality, places a larger priority on contraceptive targets.[3] Every type of contraception has pros and cons that are exclusive to it. The efficiency of a contraceptive technique is simply one factor that determines its success; another is how often it is used correctly. Main problem with these present contraceptives is the adverse effects associated with long term use such as liver disorders, cardiovascular effects and carcinogenesis.[4] As there are many formulations of contraception in Unani literature. As a result, people may choose to use the contraceptive medications that are listed in Unani literature.

HISTORICAL BACKGROUND

The idea of family planning first came to light in the early 1980s (1971), as the global population approached 3 billion people and continued to rise at an accelerated rate. However, the usage of contraception dates back nearly 4,000 years. One of the first known texts on gynecology is the Egyptian papyrus known as the Kahun Papyrus (1850 BC), which contains several prescriptions for contraception, including the use of paste made locally from crocodile dung.[5] It is thought that the dung's low pH may have had a spermicidal impact.[6] A combination of bitter apple, dates, and acacia tips combined with honey was also described in Ebers Papyrus (1550 BC) as being deposited in the vulva as spermicidal.[7] Hippocrates (460–377 BC) discussed "coitus interruptus" and "wiping the vagina with the finger" as methods of contraception in his treatise "Nature of Women." Additionally, he had brought up the usage of Daucus carrota, or wild carrot, as an oral contraceptive.[8] The first hormonal contraceptive that Greek women routinely used was pomegranate.[9] Family planning was suggested by the renowned Greek philosopher Aristotle (384–322 B.C.). He also recommended a number of treatments, such as the local use of cedar oil and lead ointment, which created barriers or had spermicidal effects.[10] The next documented use of coitus interruptus as a means of contraception was noted in the Bible's Book of Genesis.[7]

A wealth of knowledge regarding the indications, procedures, prescriptions, contraindications, and even the mechanisms of action of contraception was included by renowned physicians during the Middle Ages, a renowned period in Arabic medicine.[11] In his book “Al Qanoon Fit Tib,” Ibne Sina (980–1037 AD), a renowned physician, philosopher, and thinker in Arab medicine, detailed in detail a number of ailments, treatments, and contraceptive medications that were administered as oral, pessary, suppositories, liniments, ointments, pastes and ointments.[12] A range of contraceptive prescriptions were outlined during the 10th-century flourishing of Arabic medicine, especially in the writings of Razi, Ali Ibn Abbas Majusi, Ibne Sina, and Ismail Jurjani. In his book "Kitab Al Hawi Fit Tib," Zakaria Razi (865–925 A.D.) brought back to life the contraceptive writings of Buqrat, Duscaridoos, Rofas, Ibn Serabuen, Ibn Masoya, Al Kandi, and Hunnain Bin Ishaq.[13]

INDICATIONS

Prominent Unani physicians exclusively provided contraceptives in the following circumstances: if the mother's mental illness, serious systemic illnesses, infantile uterus, congenital urogenital deformity, or pregnancy will result in a higher risk of complications or death.[14-16]

TECHNIQUES OF CONTRACEPTION

Methods for stopping semen from entering the uterus. Interruptus coitus; medication suppositories and tablets are inserted into the vagina to block the uterine opening and stop semen from entering the uterus. Procedures to follow in the event that the uterus has been penetrated by semen: Following intercourse, the couple should be removed as soon as possible, and the woman should sneeze, shout, and continuously jump on her back to get rid of the ejaculate before fertilization. The more successful approach was inducing menstruation before to fertilization or implantation through the use of numerous Unani medications.[12,17-19]

INVESTIGATIONS ON THE PHARMACO-KINETICS OF UNANI CONTRACEPTIVES

Neem oil (Azadiracta indica)

Famous Unani physician Azam Khan stated in his book Akseer Azam that women who take 4.5 grams of neem oil orally become sterile. Due to the presence of certain chemical constituents, including nimbin, nimbid, and nimbindin, neem oil, which is extracted from neem tree seeds, has been found to possess strong spermicidal and anti-implantation activity.23 NIM-76 and Azadirachtin. Intravaginally, the oil inhibited rhesus monkeys (10 ml), women (10 ml), and rats (20 µl) from becoming pregnant. Rats treated with a 25 µl oral dosage of neem oil exhibit anti-implantation effects.[6]

Pudina/pepper mint (Mentha arvensis)

Numerous Unani literature has advocated using pessaries consisting of peppermint extract as a form of contraception before the coitus.[13-15] *Mentha arvensis*'s uterotonic fraction, which comprises menthol, menthone, and camphene, has been shown in a recent study to have anti-implantation activity by amplifying the estrogenic effect of estradiol.[19] The earliest known written mention appears in a work authored by Hippocrates and dates back to the late 5th or 4th century B.C. After being exposed to sperm for eight hours, they should be chewed.[20] The seed damages the uterine lining, which prevents the fertilized egg from implanting. Because it contains flavones, apigenine, and quercetine, it has modest oestrogenic

properties when given orally to mice between days 4 and 6 post-coitum at doses of 80 and 120 mg/mouse.[19,21]

Anar/pomegranate (Punica granatum)

In his book Kamil us Sana, Ali Ibn Abbas Majoosi reported that females used *P. granatum* mixed with aluminium hydroxide as a pessary before coitus to prevent conception. In rats, 50% of the ethanol extract exhibited anti-implantation action.[22] The fruit's seeds, which are currently the best source of plant oestrogen, contain oestrone, which is equivalent to the hormone oestrogen and inhibits the formation of new follicles.[23] Tanning agents, a class of polyphenols with spermicidal properties, are found in pomegranate rind.[24]

Badrooj (Ocimum basilicum)

By interfering with the estrus cycle and prolonging the dioestrus phase, a hydroalcoholic extract of *Osmium basilicum* leaves in female Wistar rats exhibits anti-ovulatory action.[25]

Table 1: Drug characteristics.

S. no.	Drug (scientific name)	Part used/form/formulation	Route of administration	Time of administration
1	Anar (*Punica granatum*)[10,16,26]	Seeds powder	Vaginal pessaries	Before and after coitus
2	Asfidaj (white lead)[10,16,27]	As such	Vaginal pessaries	Before coitus
3	Basl (*Allium cepa*)[10,17,27]	Bulb	On glans penis as anointment	Before coitus
4	Balsam (*Commiphora opabalsamum*)[27,29]	Seeds oil	Oral/local application	Before coitus
5	Baqla (*Vicia faba*)[10,12]	Seeds powder	Oral	76 days
6	Baid Anjeer (*Ricinus communis*)[26,29,30]	Peeled seeds powder	Oral	After menstruation
7	Badrooj (*Ocimum basilicum*)[12,16,27]	Leaves juice	Oral	After menstruation
8	Filfil siyah (*Piper nigrum*)[12,13,16,17]	Seeds powder	Vaginal pessary	After coitus
9	Gharab (*Salix babylonica*)[14,31]	Leaves juice and fruits powder	Oral/pessary	After menstruation
10	Haldi (*Curcuma longa*)[10]	Rhizom e powder	Oral/vaginal pessary	After menstruation
11	Jauz (*Jugalans regia*)[12]	Leaves powder	Oral	After menstruation
12	Khabs-ul- hadeed (iron rust)[10]	Powder	Vaginal pessaries	After menstruation
13	Kaknaj (*Physalis alkekenji*)[10]	Fruit powder	Oral	After menstruation
14	Karnab (*Brassica olerecea*)[12,14,16,27]	Seeds/buds powder/extract	Vaginal pessaries	Before coitus
15	Kunjad (*Sesamum indicum*)[10,13,27]	Seeds oil	On glans penis as anointment	Before coitus
16	Kishneez (*Coriandrum sativum*)[10]	Seeds powder	Oral/vaginal pessaries	After menstruation
17	Kafoor (*Cinnamomum camphora*)[10]	Oleo-gum	Oral	Before coitus
18	Luk (*Laccifer lacca*)[27]	Exudation	Oral	After menstruation
19	Milh-e-Indrani (rock salt)[10,14]	Salt	Vaginal pessaries/locally on glans penis	Before coitus
20	Neem (*Azadiracta indica*)[27]	Seeds oil	Oral	After menstruation
21	Naushadar (ammonium chloride)[10]	Salt	Vaginal	After menstruation
22	Na'na (*Mentha arvensis*)[10,12,16,27]	Leaves juice	Vaginal pessaries	Before coitus
23	Patsan (*Hibiscus sabdariffa*)[27]	Seeds powder	Oral	After menstruation
24	Qaranfal (*Syzgium aromaticum*)[29]	Buds powder	Oral	After menstruation
25	Qatran (*Pinus sylvestris*)[10,12,14,16,27]	Oleo-resin	Vaginal pessary/locally on glans penis	Before coitus
26	Suddab (*Ruta graveolans*)[14,27,28]	Leaves juice/powder	Vaginal pessaries	After menstruation
27	Shibbat (*Anithum sowa*)[10]	Leaves/seeds	Oral/vaginal pessaries	Before coitus
28	Saqmoonia (*Convulvus scammony*)[16,26-28]	Gum powder	Locally on penis as liniment	Before coitus

Continued.

S. no.	Drug (scientific name)	Part used/form/formulation	Route of administration	Time of administration
29	As'l (Honey)[27]	As such	Local	Before coitus
30	Ward (*Rosa damascus*)[10]	Petals	Oral	After menstruation
31	Zaj (aluminium hydroxide)[27]	Salt	Vaginal pessaries	After menstruation

CONCLUSION

Numerous drugs have been used historically to reduce fertility, and modern scientific research has confirmed anti-fertility effects in at least some of these tested. Though Unani contraception may never reach the level of contraceptive protection as the modern ones, but it offers an alternative for women who have difficulty with modern contraceptive options or who just want to try a different way. so, it is the need to test the remaining Unani drugs as well as to do further clinical trials and make these drugs as patent contraceptives. This might provide a step to find the one ideal contraceptive in the upcoming future.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Ali M, Ahmad I, Ismail M, Khan F. Unani contraceptives: a substitute for contemporary unmet. Int J Reprod Contracept Obstet Gynecol 2025;14:2044-8.