A Review on Musaqqit-e-Janeen (Abortifacient) Advia mentioned in old Unani Literature

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***Abstract- Unani* system of Medicine has a prosperous background of various herbs with *musaqqit-e-janeen* (abortifacient) as well as (mudir-e-tams) emmenagogue property since ancient times. Although many of them are unknown in modern medicine. To describe their efficacy, safety and usefulness , only few of them have been experimentally studied. These herbs may be helpful for therapeutic or induced abortion owing to its potentially lower side effects than chemical agents. This review is an attempt to give the information regarding several abortifacient herbs mentioned in *Unani* literature and suggested further studies.**

***Keywords*: musaqqit-e-janeen, abortifacient, emmenagogue, herbs.**

INTRODUCTION:

Abortion is one of the most common gynecological experiences and perhaps the majority of women will undergo an abortion in their lifetimes[1].There is no aspect of obstetrics and gynaecology which has aroused more controversy than termination of pregnancy. This is not surprising because induced abortion cannot be considered in medical terms alone; it arouses strong personal emotions and involves religious and ethical considerations. From the time of Hippocrates, the consensus of medical opinion was opposed to induced abortion but the 20th century has seen a change in this traditional stance[2].

Classically abortion is the termination of pregnancy before the fetus is viable[3]. Abortion in India has been legalised under various circumstances with the introduction of the Medical termination of Pregnancy (MTP) Act, 1971[4]. A study in 2018 estimated that 15.6 million[5] abortions took place in India in 2015. Therapeutic abortion is the termination of pregnancy before the time of fetal viability for the purpose of safe guarding the health of the mother[6]. Abortion can now be performed until 24 weeks of pregnancy as the MTP Amendment Act 2021[7]. According to the MTP Amendment Act 2021, following are the conditions in which MTP can be performed:

- Contraceptive failure in married/unmarried women.
- Survivors of sexual abuse, minors, victims of rape, incest, disabled women(physical as well as mental) can undergo termination up to 24 weeks of gestation
- For foetal anomalies, termination can be perform anytime during gestation[4].

Pregnancy can be terminated up to 20 weeks on the advice of one doctor and up to 24 weeks on the advice of two doctors. After 24 weeks medical board will decide about termination of pregnancy and each board will have a gynaecologist, sonologist, pediatrician and other members notified by the government.

Abortion has been described in Unani literature under the heading *'Isqaat-e-Hamal'*. Expulsion of the fetus from the uterus before 7 lunar months is *isqaat-e-hamal*. A number of causes has been mentioned for *isqaat-e-hamal* such as generalized weakness, anemia, fall, lifting heavy weight, excessive work, anxiety & fear, excess of grief, extreme cold and heat, use of *Qawi mus'hilaat*, alcohol abuse and certain diseases of uterus, excessive bleeding, sternous exercises, excessive fatigue, severe diarrhea and vomiting, syphilis, tuberculosis, raqiq or ghaleez mani etc [7,8,9].

These days, early pregnancy termination can be managed medically with mifepristone and misoprostol. But owing to the certain side effects of these drugs, such as nausea, diarrhea, headache, abdominal cramps and uterine rupture as well, attention needs to be paid to herbal medicine as an alternative. There are a number of abortifacient drugs which are mentioned in Unani texts as *musaqqit-e-janeen wa masheema*. Drugs having *mudir (emmenagogue), mus'hil (purgatives), muqi (emetics), mazluq (slippery), mautis (Sneezing producer),* properties are also known to have abortifacient effect[8,9,10](Table 1). Few of these herbs have been experimentally studied for their abortifacient property. This review is an attempt to give the information regarding various abortifacient drugs mentioned in *Unani* literature.

Material and methods:
Literature searched for the purpose were, *Al-Qanoon, Haziq, Al-Hawi, Jamiul Hikmat, Tanqeehul Mufradat, Bustanul Mufradat*, NFUM to collect information on herbs having *musaqqit* (abortifacient) property. Computerized databases like pubmed, researchgate, science direct, google scholar, brieflands were also searched.

Table 1: List of plants found in *Unani* texts having abortifacient property.

Unani Name	**Botanical Name**	**Family**	**Activity**
Hanzal	Citrullus colocynthis	Cucurbitaceae	Mudir-e-tams, Qatil-e-janeen, Musaqqit-e-janeen
Murr	Commiphora myrrh	Burseraceae	Mudir-e-tams
Suddab	Ruta graveolens	Rutaceae	Mudir-e-tams, Musaqqit-e-janeen
Jaosheer	Opopanax chironium	Apiaceae	Mudir-e-tams, Musaqqit-e-janeen
Zarawand	Aristolochia rotunda	Aristolochiaceae	Mudir-e-tams, Mukhrij-e-janeen
Khayar-e-shambar	Cassia fistula	Caesalpiniaceae	Mukhrij-e-masheema
Hilteet	Ferula asafoetida	Umbelliferae	Mudir-e-tams, Mukhrij-e-janeen
Khurbuk	Helleborus niger	Ranunculaceae	Mudir-e-tams, Qatil-e-janeen, Musaqqit-e-janeen
Turmus	Lupinus albus	Leguminosae	Mudir-e-tams, Mukhrij-e-janeen, Musaqqit-e-janeen
Abhal	Juniperus communis	Coniferae	Mudir-e-tams, Musaqqit-e-janeen
Arand	Ricinus communis	Euohorbiaceae	Mudir-e-tams
Harmal	Peganum harmala	Rutaceae	Qatil-e-janeen, Mukhrij-e-janeen
Ushq	Dorema ammoniacum	Umbelliferae	Musaqqit-e-janeen
Majeeth	Rubia cordifolia	Rubiaceae	Mukhrij-e-masheema, Mukhrij-e-janeen, Mudir-e-tams
Mashkatramashi	Mentha pulegium	Labiatae	Mudir-e-tams, Musaqqit-e-janeen
Eersa	Iris ensata	Iridaceae	Mukhrij-e-janeen
Darcheeni	Cinnamomum zeylanicum	Lauraceae	Mudir-e-tams, Musaqqit-e-janeen
Afsanteen	Artemisia absinthium	Compositae	Mudir-e-tams, Musaqqit-e-janeen
Muqil	Commiphora mukul	Burseraceae	Mudir-e-tams, Jazib-e-janeen
Filfil	Piper nigrum	Piperaceae	Mukhrij-e-janeen
Jintiyana	Gentiana lutea	Gentiaceae	Mudir-e-tams, Qatil-e-janeen, Musaqqit-e-janeen
Farfiyoon	Euphorbia resinifera	Euphorbiaceae	Musaqqit-e-janeen
Salikha	Cinnamomum cassia	Lauracae	Mudir-e-tams, Mukhrij-e-janeen
Kunjad	Sesamum indicum	Pedaliaceae	Mudir-e-tams, Musaqqit-e-janeen
Qust	Saussurea lappa	Compositae	Mudir-e-tams
Branjasif	Achillea millefolium	Compositae	Mukhrij-e-janeen,

			Mudir-e-tams, Qatil-e-janeen, Musaqqit-e-janeen
Daar-e-shishan	Myrica nagi	Myricaceae	Mukhrij-e-janeen
Gul-e-Maryam	Anastatica hierochuntica	Brassicaceae	Mukhrij-e-masheema, Mukhrij-e-janeen
Kheiri	Cheiranthus cheiri	Brassicaceae	Mukhrij-e-masheema, Mukhrij-e-janeen Mudir-e-tams
Habbul Ghaar	Laurus nobilis	Lauraceae	Mukhrij-e-janeen, Musaqqit-e-janeen
Anzaroot	Astragalus sarcocola	Leguminosae	Musaqqit-e-janeen
Henna	Lawsonia inermis	Lythraceae	Musaqqit-e-janeen
Foodanj	Mentha arvensis	Melastomaceae	Mukhrij-e-janeen Mudir-e-tams, Qatil-e-janeen, Musaqqit-e-janeen
Zafran	Crocus sativus	Iridaceae	Mukhrij-e-masheema
Seer	Allium sativum	Liliaceae	Mukhrij-e-masheema, Mudir-e-tams
Parsiaoshan	Adiantum capilus veneris	Polypodiaceae	Mukhrij-e-masheema, Mukhrij-e-janeen Mudir-e-tams
Hasha	Thymus serphyllum	Labiatae	Mukhrij-e-masheema, Mukhrij-e-janeen, Mudir-e-tams
Baboona	Matricaria chamomilla	Asteraceae	Mudir-e-tams

Studies on various drugs:

***Murr* (Commiphora myrrha):** Vafaei et al. assessed the efficacy of myrrh in patients with incomplete abortion. The rate of successful complete abortion was 82.9% compared with the placebo group which was 54.3%[11].

***Harmal* (Peganum harmala):** A case report of a 24 year old woman with 22 weeks of pregnancy intoxicated with the seeds of Peganum harmala underwent unconsciousness, uterine contraction and oliguria[12]. The pharmacologically active compounds of this plant include quinazoline alkaloids vasicine and vasicinone have been responsible for abortifacient activity[13].

***Suddab* (Ruta graveolens):** In a study examining the abortion and estrogenic activity of ethanolic extract of *suddab* on different days of pregnancy in female rats, abortion or stillbirth was not observed on one to six days but fetal malformation was observed after use on seven to nine days of gestation. The alkaloids (cosquisagenine, skimmianine, and graveoline)[14] in the plant decreases the number of fetal cells as well as transmission of fetus from the oviduct to the uterine branches[15].

***Zafran* (Crocus sativus):** In a prospective case-control study on pregnant female farmers during harvesting of *zafran* ,the abortion rate was significantly higher among female farmers who are exposed to *zafran*[16]. Another study done by Hosseini et al. on female mice to assessed the abortifacient and teratogenic effect of C. sativus showed that the number of resorbed and demised fetuses were significant[17].

***Henna* (Lowsonia inermis):** The abortifacient effects of hydroalcoholic extract of *henna* was investigated by Esteki and Miraj and showed the result that *henna* significantly increase estrogen and decrease progesterone levels; besides, induced abortion was significantly lower in the experimental groups[18].

***Abhal* (Juniperus communis):** Sabinyl acetate is a terpenoid compound found in this plant and accounts for it's abortive property by preventing implantation[19]. A study conducted by Mortazavi Gazar et al. assessed the effects of alcoholic extracts of *abhal* on oogenesis in mice. The result was that *abhal* could cause corpus luteum and atrophic follicles to increase and graffian follicle to decrease, which can have undesirable effects on implantation and the number and size of the ovum[20].

***Baboona* (Matricaria chamomilla):** In an experimental study, Mirzakhani assessed the abortive effect of *baboona* in 80 adult female rats and showed a significant increase in the number of aborted foetuses and follicle atresia and decrease serum estrogen, progesterone, LH, FSH levels[21]. It also causes uterine contraction resulting in abortion[22].

Conclusion:
Review of Unani literature provides a list of herbs having abortifacient property. Scientific validation of few of them has proved their efficacy as abortifacient which justify upto some extent the claim of abortive property of these drugs by Unani physicians. Further studies are needed to provide evidence for the same.

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