



Umbilical Drug Dressing

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ABSTRACT

To date, many routes of drug administrations have been approved like Intra-Venus (IV), Intra-Muscular (IM) and etc. Finding new methods of drug delivery systems is a goal for many medical researches. Traditional systems of medicine are treasures of human experiences which can be subject of new researches. In this study, traditional knowledge of Iranian people (Persian Medicine or PM) about drug administration via navel area of the abdomen has been collected and presented. Our results revealed that, more than 80 herbal or mineral products have been traditionally used for more than 25 disorders via umbilical part of the belly.

Keywords: traditional, Persian medicine, umbilical, drug dressing.

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INTRODUCTION

There are some methods of drug application in conventional allopathic medicine like: Intra-Venus (IV), Intra-Muscular (IM), Sub-Cutaneous (SC), Intra-Peritoneal (IP) and etc. New routes of drug administration are surveying by many researchers because each of these methods has special indications and contraindication. Diversity of these methods help physicians to manage complicated cases of illness whose drug delivery has been faced with problems (1, 2).

In a previous study, medicinal smokes of more than 256 medicinal herbs from 50 countries have been used for many diseases like: Mental disorders, gynecologic diseases, sinusitis and etc. there are three different methods for applying medicinal smoke, namely smoke inhalation, smoke directed at a specific organ and ambient smoke (passive smoking) (3).

Traditional Persian Medicine (PM) has more than 5000 years old history of treatment. It is based on balancing of the body and it is a treasure of novel method of treatments (4). In this study, we present a new method of drug application: "umbilical drug dressing" (UDD) from PM texts.

This method is also available in traditional Chinese medicine and doctors apply the particular drug externally to the navel in order to treat disease (5).

MATERIAL AND METHODS

In this qualitative study, PM texts of century 10 to 20 AD (2 to 14 Ah) have been searched about umbilical drug administration. According to our findings, 14 books from 8 different authors selected for this purpose (Table 1). These books have been evaluated line by line about "Naaf" or "Sorreh" which means navel. Also, a complementary search has been done by Noor-o-Tib Software (A Database of PM books) with these keywords (6).

A MEDLINE search with proper words has been done to find similar articles about umbilical drug administrations. The keywords used were Navel, Umblicus, Umblical, Umbli*, Naaf, Naf, Sorreh, Sorre, ethnopharmacology. The research included the works and data available in English and Persian.

RESULTS

Definition of UDD

Navel is the scar of cutting umbilical cord at the time of birth which represents the unique land mark of the human abdomen. Umbilical drug dressing is a superficial umbilical drug administration which is a kind of drug delivery system from the place of umbilicus skin (7).

Types of UDD

Viscosity of the remedy is the main factor of classification of the UDD drugs. According to this fact there are 5 main types of UDD in the PM traditional resources (8):

1-Marham : natural drug (base on plant , animal or mineral) that scrubed soft and mixed with oil wax ,so it be useable to applying on the body.

2-Zemad : natural drug in the form of liquid with thick consistency ,rubed on the body.

3-Tela : natural drug in the form of liquid with diluted consistency ,rubed on the body.

4-Kamad : natural drug that poured in a cloth and warm up with dry heat or mixed with hot water and as long as its hot , puted on the body .

5-Tadhin : applying oil on the body.

Indications of UDD

UDD is mainly used in gastro-intestinal and genito-urinary disorders but it not used only for organs which are on the neighborhood of the navel. UDD used for more than 30 disorders even dermatological ones. After grouping and concluding the search results, main disorders which treat with UDD are summarized in Table 2.

Natural ingredients of UDD

There are many herbs, minerals and animal agents have been used in different types of UDD preparations in form of Zemad, Tela and Kamad. Around 80 herbs (Table 3), 5 mineral agent (Table 4) and 3 animal parts (Table 5) used in different kinds of UDD preparations single or combined with other agents.

DISCUSSION

Thin layer of abdominal wall in the umbilical area can be a good reason for applying topical drugs in this area.

The embryonic umbilicus contains the connecting stalk, umbilical vessels, vitelline duct and vessels, allantois, and loop of the intestine. Changes occur to form the definitive cord, which contains three umbilical vessels, namely, "one vein and two arteries," embedded in Wharton's jelly (9). After birth, the umbilical vessels inside the body obliterate and gradually form ligaments.

Main layers of umbilicus from superficial to deep are: Skin, Subcutaneous Tissue (fatty and membranous Layers), Anterior layer of rectus sheet, Transversalis fascia, extraperitoneal fascia, peritoneum, Median umbilical ligament and fold. The important note is the thick layer of Rectus abdominis muscle is not present in the umbilical area (10).

UDD herbal, Mineral or animal ingredients also play important role in the efficacy of the application. Many of these parts have proved effects on the target disorder according to the new studies which are presented in the last column of the Tables 3, 4 and 5.

In traditional Persian medicin books , navel placement and interior proximity is stated (11 , 12).Umbilical artery from splits of descending aorta artery and in the vicinity of the detachment of vesical artery clearly is explained (13).

Ibn-sina has said , navel is passageway of vessels that blood from uterus brings to body of fetus , so some of the old wise men believe , the navel is the first member of the human body to come into existence (14).

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Table1. Selected PM manuscripts for analyzing of text about

Date of written (Century/AD)	Autor	English/Latin name	Persian name
10	Rhazes	Comprehensive book on medicine (Rhazes' Liber Continens)	Al hawi fi al tibb (7)
10-11	Avicenna	The canon of medicine	Qanoun fi al tibb (14)
11-12	Jorjani	Handbook of Alai	Khafi-e-Alai (15)
11-12	Jorjani	Purposes of the medicine and Alayieh subjects	Al aghraz al tebiyeh va al mabahas al Alayie (16)
14 -15	Kermani	Description of the causes and symptoms	Sharh al asbab va al alamat(17)
17	Tonekaboni	Present	Tohfeh (18)
18	Arzani	Scale of medicine	Mizan al teb (19)
18	Arzani	Enlving of the hearts	Mofarah al gholoob (20)
18	Arzani	Akbari's medicine	Teb-e-akbari (21)
18	Shirazi	Great pharmacopeia	Qarabadin- e - kabir (8)
18	Shirazi	Conclusion of the wisdom	Kholasat al hekmat (22)
18	Shirazi	The storehouse of the medicinaments	Makhzan al adviyeh (23)
19 – 20	Azam khan	Azam's pharmacopeia	Qarabadin-e-Azam (24)
19 - 20	Azam khan	Azam's elixir	Exir-e-Azam (25)

Table2. Indications of UDD in different organ disorders

Organs	Traditional therapeutic effect	Method of use
Head & neck	Dysquamation and dry lips skin	Ta
Respiratory	Cough , pneumonia	Ta , Te
Gastrointestinal	Dysentery , stomachache due to bloating , constipation , diarrhea , anthelmintic effect , colic , dilator anal sphincter effect , anal fissure	Z , Te , Ta , M , K
Gynecologic	Dystocia , uterus disease (inflammation , polymenorrhagia , amenorrhea , itch), uterus disease named " ekhtenagh "a, abortifacient effect , premature ejaculation	Z , Te , K
Urinary	Retention of urine , frequency	Z , Te
Others	Fever , loss of consciousness due to drinking wine , heat exhaustion , dry skin	Ta

Ta : Tadhin , Te : tela , Z : Zemad , M : Marham , K : Kamad

a uterine disease that has signs and symptoms like seizures and epilepsy (8).

Table3. herbal ingredients of UDD complexes

Scientific name	Common name	Persian traditional name	Part use	Traditional therapeutic effect	Method of use	Therapeutic effect in literature
Achillea millefolium L.	Yarrow	Beranjasef	Branch, flower	Provokes mense effect , Amenorrhea ,	K , Z	Uterine Contraction(26)

				Uterus itch		
Aloe vera L.	Aloe	Sabr	Exodate	Anthelmintic effect ,Polymenorrhagia effect	Te, Z	Antimalaria (27)/ Antiparasit(28)/ Cotraction of the blood Vessle of Uterus(29)
Althaea rosea	Hollyhocks	Khatmi	Leaf, Seed, Flower	Inflammation of the Uterus	Z	Inhibitet inflammation(30)
Anethum graveolens L.	Dill	Shebet	Leaf, seed oil	Chronic colic, Seizure	K	Seizure (31)
Apium graveolens L.	Celery	Karafs	Seed	Emmenagogue effect	K	-
Artemisia absinthium L.	Wormwood	Afsantin	Flower	Anthelmintic effect ,Taenia solium, Ascaris, polymenorrhagia	Z, Te	Malaria (32)/ Schistosomiasis (33)/ GI nematode infection(34) / Intestinal coccidiosis(35)
Artemisia sieberi Besser	Southern wood	Sheeh	Areal parts	Anthelmintic effect	Te, Z	Against leishmania (36)/ Antibacterial in chicken(37)
Asarum europaeum L.	Asarabacca	Asarun	root	Dysentery	Z	Antibacterial effect(38)
Atriplex halimus	Melde	Sormagh	Seed, Leaf	Anthelmintic effect	Te	Intestinal worms(39)
Berberis vulgaris L.	Barbery	Ambarbaris	Fruit	Taenia Solium, Ascaris	Z	Antileishmania (40)
Boswellia sacra Flueck	Frankincense	Kondor	Gum	Polymenorrhagia	Z	-
Brassica oleracea L.	Cabbage	kalam	Leaf	Emmenagogue effect	K	-
Cassia fistula L.	Golden shower tree	Khlar shanbar	Fruit	Laxative effect, Costipation	Te	Functional constipation(41)
Cichorium intybus L.	Cichory	Kasni	Leaf	Inflammation of Uterus	Z	Anti- inflammatory(42)
Cinnamomum camphora (L.)J. Presl	Camphor	Kafoor	Gum	Retention of Uterine, Inflammation of the Uterus	Te, Z	-
Cinnamomum verum J.presl	Cinnamon	Darchin	Bark	Emmenagogue effect	K	Decrease Uterine contractility(43) / increase Menstrial cyclicity(44)
Citrullus colocynthis (L.)Schrad	Colocynth	Hanzal	Seed oil, fruit	Abortifacient effect ,Anthelmintic effect ,dystocia	Te, Ta, Z	Abortifacient(45)/ Larvicidal effect(46) /

						Parasitic disease(47)
<i>Cocos nucifera</i> L.	Coconut	Nargil	Fruit	Anthelmintic effect	Ta , Te	GI Helminthic infection in animal(48)
<i>Commiphora myrrha</i> L.	Myrrh	Morr	Gum	Anthelmintic effect , Dystocia , Remove dead fetus effect	Te , Z	Intestinal schistosomiasis (49) / Antiparasite(50) / Miscarriages , Uterine Stimulant(51)
<i>Coriandrum sativum</i> L.	Coriander	Gheshniz	Leaf	Inflammation of Uterus	Te	-
<i>Corylus avellana</i> L.	Hezelnut	Fandogh	Fruit	Chronic diarrhoea	Z	-
<i>Crocus sativus</i> L.	Saffron	Zaferan	Flower	Anthelmintic effect	Te	Against leishmania(52)
<i>Cucurbita pepo</i> L.	Squash, Pumikin	Kadoo	Seed Oil	Meningitis , Melancholia , Insanity, Fever , Insomnia , Headache	Ta	Fever (53)/ Insomnia(54)
<i>Cuminum cyminum</i> L.	Cumin	Zireh	Seed	Colic	K	Colic(55)
<i>Cyclamen persicum</i> Mill.	-	Bokhoor-e- maryam	Root	Constipation (in child, adult)	Te , Z	-
<i>Cydonia oblonga</i> Mill	Quinc	Beh	Seed	Retention of Urine	Te	Diuretic effect(56)
<i>Cymbopogon Schoenanthus</i> (L.)spreng	Lemon Grass	Ezkher	gum	emmenagogue effect	K	-
<i>Cyperus rotundus</i> L.	Coco grass	Sod	Root	Polymenorrhagia	Z	-
<i>Ecballium elaterium</i> (L.)A. Rich	Exploding cucumber	Ghesa-ol- Hemar	Root	Laxative effect, Anthelmintic effect	Z	Laxative(57)
<i>Elettaria cardamomum</i> (L.) Maton	Green Cardamomum	Ghaghaleh	Fruit	Emmenagogue effect	K	-
<i>Embelia ribes</i> burm.f	False black pepper	Berange kaboli	Seed	Constipation, Laxative effect	Z	-
<i>Euphorbia cotinifolia</i> L.	Smoke tree spurge	Shobrom	Latex	Laxative effect	Te	Laxative(58)
<i>Helleborus niger</i> L.	Black hellebore	Kharbaghe-e- siah	Root	Abortifacient effect	Z	-
<i>Hordeum vulgare</i> L.	Barley	Shaeer	Seed	inflammation of Uterus Diarrhoea emmenagogue	Z	Preventing diarrhea(59 , 60)

Indigofera tinctoria L.	True indige	Neyl	Flower	Laxative effect	M	Laxative(61)
Iris germanica L.	Sword lily	Zanbagh	Root /Flower	Anthelmintic effect, Air gas in the Uterine cavity	Te	Antiplasmodial (62)
Juniperus sabina L.	Sabine	Abhol	Fruit	emmenagogue effect	K	Amenorrhea(63) / Provokes menstrual Extremely (64,65)
Lactuca sativa L.	Lettuce	Kahoo	Seed oil	Melancholia	Ta	-
Lagoecia cuminoides L.	Common wild cumin	Gherdemana	Seed	Anthelmintic effect	Z	Antileishmania (66)
Laurus nobilis L.	Laurel	Hab-ol-ghar	Leaves	Stomachache	Z	Gastroprotective effect(67) / Gastric juice secretion(68)
Lens culinaris Medik	Lentil	Adass	Seed	Polymenorrhagia, Dysentery, Inflammation of Uterus, polymenorrhagia	Z	Endometrium , Abnormal Uterian bleeding(69) / GI discover(70)
Lepidium sativum L.	Cress	Horf	Seed ,Aerial parts	Anthelmitic effect	Z	-
Linum usitatissimum L.	Flax	Katan	Seed	Anthelmintic effect	Z	Anthelmintic(71)
Lupinus angustifolius L.	Blue Lupin	Tormes	Seed	Anthelmintic effect	Te , Z	-
Mangifera indica L.	Mango	Anbeh	Fruit , Bark	Diarrhoea	Te	Antidiarrhoea (72,73)
Matricaria chamomilla L.	Yellow chamomile	Babooneh	Flower	emmenagogue effect	K , Z	Uterotonic action(74)
Melilotus officinalis L.	Melilot	Aklil-ol-malek	Fruit	Uterus disease Named "Ekhtenagh"	K , Te	-
Mentha piperita L.	Peppermint	Nana	Arial pars	Uterus itch	Z	-
Mentha pulegium L.	Pennyroyal	Poodneh	Aerial part	Anthelmintic effect/ Seizure	Te , K	Anthelmindic (75,76) /Seizure(77)
Myristica fragrans Houtt	Nutmeg	Joz-e-bua	Fruit	Emmenagogue effect , Frequency of Urine	K	-
Nerium Oleander L.	Oleander	Defli	White flower	Dilator anal sphincter effect	Z	Muscle relax activity(78)
Nigella sativa L.	Black cumin	Shoniz	Seed	Anthelmintic effect, seizure	Te , Z	Antiparasit (79)/ Seizure(80)/

						Antischistosomiasis (81)
<i>Nymphaea alba</i> L.	Water lily	Niloofar	Flower Oil	Insomnia, Scaling of lips, Uterus itch, Headache, Uterus itch	Ta, Z	Demulcent, astringent, sedative(82)
<i>Olea europaea</i> L.	Olive	Zeytoon	Fruit oil, Leaf	Laxative effect, Uterus itch	Ta, Z	Constipation(83)
<i>Origanum majorana</i> L.	Marjoran	Marzanjoosh	Arial parts	Colic	M	Digestive disorder(84) / stomach bloating(85)
<i>Quercus robur</i> L.	Oak	Baloot	Fruit	polymenorrhagia	Z	Antidiarrhoea(86)
<i>Paliurus spina - Christi</i> Mill	Jerusalem thorn	Sedr	Leaf	Uterus itch	Z	-
<i>Panicum miliaceum</i>	Millet	Arzan	Seed	Colic pain	K	-
<i>Papaver somniferum</i> L.	Opium poppy	Khashkhash	Seed, exudate	Diarrhoea, Premature ejaculation	Z	Antidiarrhea inhibit(87) / premature ejaculation(88)
<i>Peganum harmala</i> L.	Harmal	Hormal	Seed	Chronic colic	Z	Colic(89)
<i>Phoenix dactylifera</i> L.	Date palm	Khorma	Fruit	polymenorrhagia	Z	-
<i>Pimpinella anisum</i>	Anise	Anisoon	Seed	Colic	K	GI effect (antispasm colic, decrease bloating)(90)
<i>Pistacia lentiscus</i> L.	Mastic	Mastaki	Gum	Epilepsy	Te	Epilepsy(91)
<i>Prunus armeniaca</i> L.	Apricot	Zard aloo	Leaf	Anthelmintic effect	Z	-
<i>Prunus dulcis</i> (Mill)D.A.Webb	Sweet almond	Badam	Fruit Oil	Cough, Insomnia, Melancholia	Ta	Sedativ and hyponotic effect(92)
<i>Prunus persica</i> (L.)	Peach	Shaftaloo	Flower, leaf, Seed	Anthelmintic effect	Te, Z	Kill worm in wound(93)
<i>Punica granatum</i> L.	Pomegranate	Golnar/Roman	Flower/ Fruit	Poly menorrhagia	Z	Menstrual bleeding(94) / abnormal uterine bleeding(95,96)
<i>Quercus infectoria</i> G. Olivier	Aleppo Oak	Afess	Fruit	Polymenorrhagia	Z	Menorrhagia (97)
<i>Rhus coriaria</i> L.	Sumac	Somagh	Leaf, fruit	Frequency of Urine	Z	-
<i>Ricinus Communis</i> L.	Castor bean	Kherva	Seed oil	Child colic, severe constipation, emmenagogue,	Ta	Increase bowel movement(98) / reduce menstrual

				Laxative in old person		Bleeding(99) / constipation(100) / contractile activity of Uterine(101)
Rosa canina L.	Dog rose	Nasrin	Flower	Anthelmintic effect, Uterus itch	Z	-
Rosa damascena L.	Rose	Gole-e-sorkh	Flower Oil	Dysentery, Inflammation of Uterus	Z	GI discover (increase ileum contraction on pigs)(102) / inhibit ileum contraction(103)
Ruta graveolens L.	Rue	Sodab	Leaf oil	Worms, Dystocia, emmenagogue effect	Te, Z, K	Against trypanosomiasis (104) / effect in Menstrual cycle(105) / as abortifacient induced abortion(106)
Salix mucronata Thunb	Safsaf willow	Safsaf	Whole plants	Anthelmintic	M	-
Santalim album L.	Sandal wood	Sandal	Wood	Inflammation of the Uterus	Z	-
Saussurea costus (Falc.) Lipsch	Costus	Ghost	Root Oil	Anthelmintic, Remove the dead fetus, Emmenagogue effect	Te, Z, K	-
Schoenocaulon officinale A.Gray	Sabadilla lily	Kondos	Root	Anthelmintic effect, Dead fetus, Abortifacient effect	Z	-
Sesamum indicum L.	Sesame	Samsam	Seed oil	Scaling of the lip Colic	Ta, Z	Improve Skin hydration, skin viscoelastic(107)
Solanum nigrum	Wonder berry	Enab-ol-salab	Fruit	Inflammation of the Uterus	K	Estrogenic activity, Antiinflammation effect(108)
Terminalia bellirica (Gaertn.)Roxb	Beleric	Balileh	Fruit	Uterus disease named "Ekhteghan"	Te	-
Terminalia chebula Retz	Myrobalan	Halileh	Fruit	Child Colic, Constipation	Te	Laxative, increase ileum motility (109)
Thymus pulegioides L.	Lemon Thyme	Sisanbar	Arial parts	Anthelmintic effect	K, Z	-
Trigonella foenum-graecum L.	Fenugreek	Holbah	Seed, leaf	Colic	K	Colic in infant(110)
Tropaeolum majus L.	Nasturium	Ladan	Flower	Polymenorrhagia	Z	Uterian

						Contractility(111)
Valeriana officinalis L.	Valerian	Nardin	Flower	Uterus itch	Z	-
Veratrum album L.	White hellebore	Kharbagh-e-sefid	Root	Laxative effect, constipation	Z	-
Vicia faba L.	Faba beans	Baghela	Seed	Inflamaton of the Uterus	Z	Strogenic effect an Uterus(112)
Viola odorata L.	Violet	Banafsheh	Flower oil	Chronic cough , Headache, Insomnia in old persons, Heat exhaustion, Fever, Desquamation and dry lips skin, Inflammation of the uterus, Melancholya , Stomachache, Insanity, Meningitis, Mental disorder,	Ta , Z	Effect on Cough (113)/ Insomnia (114)/ Antipyretic(115)
Zataria multiflora Boiss	Thyme	Satar	Arial parts	Cloic	K	-

Te : Tela , Ta : Tadhin , M : Marham , Z : Zamad , K : Kamad

Table4. mineral ingredients of UDD complexes

Common name	Persian traditional name	Traditional therapeutic effect	Method of use	Therapeutic effect in literature
Asphaltum	Qafar - ol - yahood	Anthelmintic effect	Z	Obesity (116)
Borax	Booragh	Anthelmintic effect	Z , Ta	-
Litarge / plumbous oxide	Mordasang	Diarrhea , Anthelmintic effect	Z	Lead poisoning associated with ayurvedic medications (117)
Oil	Naft	Anthelmintic effect	Ta	-
Salt	Namak	Loss of consciousness due to drinking wine	Ta	-

Z : Zamad , Ta : Tadhin

Table5. animal ingredients of UDD complexes

Common name	Persian traditional name	Traditional therapeutic effect	Method of use	Therapeutic effect in literature
Bile	Zahreh /safra	Anthelmintic effect , constipation , colic , dystocia	Z , te , ta , m	-

Dung	Sergin / pehen	Cough , colic	Ta , te	-
Ear wax (in Buffalo)	Wasakh -e- goosh	Retention of urine	Ta	-

Ta : tadhin , te : tela , z : zmad , m : marham