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**INVESTIGATING A NUMBER OF IRANIAN HERBAL MEDICINE, IN THE FORM OF
ORAL DROPS, SOLUTION, OR SYRUP IN TERMS OF PRODUCT COMPONENTS,
ACTIVE INGREDIENTS, PHARMACOLOGICAL EFFECTS AND MECHANISM OF
ACTION**

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ABSTRACT

Research in the areas of processing and production of plants applied in pharmacology and pharmacy is one of the oldest cultural and scientific characteristics of Iranians. After the introduction of Islam to Iran, it gradually developed among Iranian scientists, and using plant treatments became institutionalized in popular culture. The prophetic hadith about the characteristics of Iranian scholarship is a decisive evidence of this fact. The mentioned hadith which is well known among scholars and researchers states: "Even if knowledge is in the Pleiades, Iranians can gain it".

It should be noted that manufacturers of medicines and herbal products were able to form an association and by achieving unity and comprehensive scientific and research corporations increased their efforts in the area of improving the quality of herbal medicines. Thereby, it has benefited from the cooperation and diligent assistance of medical deputies, respected officials of plant department and control laboratory, and the ministry of Health, Treatment, and Medical Education. It is hoped that this pharmacopeia, which is based on the international guidelines and standards and represents the high level of quality of herbal medicines produced in the country, be

considered by the medical community and have a beneficial and crucial role in the promotion of public health.

INTRODUCTION

Gasterolan (Gol Daru):

Dosage form: oral drops 30 ml

Indications: antispasmodic, carminative, relieves spastic disorders and inflammatory diseases of the gastrointestinal tract

Product component: In every 5 ml of hydroalcoholic extract of Gasterolan drop there exists 55 mg of Fennel fruit, 60 mg of chamomile flowers, and 75 mg mint leaves.

Standard: based on 0.13-0.17 anethole and 24-41 mg of flavonoids (based on quercetin) per 100 ml drop

Active ingredients: fennel: anethole, estragole, and limonene; chamomile: sesquiterpene (bisabolol, chamazulene) and flavonoids; mint: menthol, cineole, rosmarinic acid, chlorogenic acid, and caffeic acid.

Pharmacological effects and mechanism of action: Fennel essence and its alcoholic extract have a significant antispasmodic effect [1]. It works by interfering with the metabolism of calcium in the smooth muscle.¹ In a double-blind clinical study with placebo on 70 patients with severe digestive disorders, such as bloating, the herbal formulation containing fennel was studied for 14 days. The results indicated the progress made in the treatment of disorders of the patients

compared with the control group [2]. Flavonoids are mainly responsible for the antispasmodic and carminative effects of chamomile. The antispasmodic effect of these compounds is equal to the effect of papaverine. Based on the study by Wurm et al., the anti-inflammatory effect of this drug is associated with inhibition of prostaglandin synthesis enzymes and lipoxygenase [3]. Clinical studies indicate that peppermint oil is effective in the treatment of some of the symptoms of irritable bowel syndrome (IBS). 54 patients with gastrointestinal disorders were treated with 40 mg of peppermint oil and 5 mg caraway oil. In this study, with a control group, it was observed that 63.1% of these patients were pain- and discomfort-free after treatment and 26.3% of them reported reduction in pain. Combined effects of the herbal components of Gasterolan, intensify the antispasmodic effects of the drug [4].

Dosage: adults and children above 6 years: 20-30 drops; and children under 6 years: 15-20 drops with a small amount of water, 3-5 times daily before meals

Contraindications and Precautions: Patients with symptoms of reflux esophagitis

should avoid products that lower esophageal sphincter (LES) pressure such as mint.

Side effects: Allergic symptoms may occur in individuals sensitive to herbal products.

Use in pregnancy and lactation: During breastfeeding and pregnancy, this medication should be used under medical supervision.

Gastrolit (Barij Essence):

Dosage form: oral drops 15 ml

Indications: treatment of symptoms of irritable bowel syndrome (IBS)

Product component: gastrolit is made from *Zataria multiflora* essential oil

Standard: based on 4.1 mg thymol per ml of product

Active ingredients: phenolic terpenes, thymol, carvacrol

Pharmacological effects and mechanism of action:

Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder, and has functional symptoms including abdominal pain with diarrhea, constipation, or alternating diarrhea and constipation. Recent studies have shown that thyme essential oil has antispasmodic effects (dilator smooth muscle) broad-spectrum antimicrobial effects (effective on bacteria, fungi, and viruses), stimulates the immune system, and is anthelmintic and anti-flatulence [5, 6]. It is also useful in relieving digestive problems and indigestion [7]. The results of a study

showed that drops containing thyme essential oil 2% (gastroliths) can relieve the symptoms of irritable bowel syndrome such as abdominal pain and bloating [7]. Only 10% of people who have IBS symptoms seek medical attention and approximately 25% of these people do not respond to treatment or experience worsening of symptoms. The use of non-specific anticholinergics, such as hyoscine, is associated with side effects including blurred vision, dry mouth, and tachycardia. The importance of this study was to introduce drugs for the treatment of IBS symptoms, which have appropriate effects but not the adverse effects of commonly used drugs in IBS. However, the ingestion of large amounts of thyme may cause mucosal irritation, nausea, vomiting, dizziness, and headache.

Based on the results of this study and considering the fact that in over 90% of cases, physicians and patients were satisfied with the results of the drug, Gastrolit drop (containing 2% thyme essential oil) can be introduced as medication which can relieve IBS symptoms.

Dosage: adults: 20 nasal drops every 8 hours, during or after meals; 14 year olds and younger: 10 drops for each time every 8 hours, during or after meals

Contraindications: pregnancy

Side effects: LD₅₀ of thyme essential oil, which is an important indicator for assessing the acute toxicity of a substance, is determined by rats as 2840 mg/kg orally. These numbers clearly indicate that consuming the recommended amounts of Gastrolit or even twice the recommended amount is perfectly safe.

Precautions: If during use specific complications were observed, discontinue use and contact doctor.

Gripe Water (Dineh Trade Community of Iran):

Dosage form: oral solution, 120 ml bottles

Drug categories: anti-flatulence, soothing stomach cramps and pain caused by bloating

Dineh Gripe Water is prepared from natural seed oil of *Carum carvi* and *Anethum graveolens*. It does not contain alcohol, sodium bicarbonate, and artificial sweeteners. The advantages of Dineh Gripe Water oral solution is the lack of alcohol (as solvent) and artificial sweeteners and this increases the reliability and quality of the product especially in infants.

Active ingredients: Each 5 ml of Dinah Gripe Water oral solution contains the essence of *Carun carvi* and *Anethum graveolens*, equivalent to 0.7 to 0.8 mg of carvone.

Therapeutic properties: The essential oil in Dineh Gripe Water has topical effects on mucous membrane lining of the stomach causing increased activity of the vagus nerve and resulting in increased bowel movements. This causes the discharge of gases of bloating and increased secretion of the digestive system.

Therefore, it accelerates digestion, relieves flatulence, and prevents fermentation of food and creation of gas.

Indications: treatment of bloating and pain, and relief of indigestion

Dosage: The permitted carvone daily intake amount per kilogram of body weight is equivalent to 1 mg. As a general statement, the product can be used as follows: Infants: 2.5 ml; children: 5 ml; adults: 10 ml; and if needed 4 to 6 times a day.

Interactions and side effects: For the mentioned essential oils used in the concentrations of Dineh Gripe Water no interactions or side effects have been reported.

Precautions and Contraindications: People with diabetes should consult with their physicians before use. The drug should be kept out of reach of children.

Storage: Keep product inside the box and away from heat. Maximum use of the product after opening the bottle is 4 weeks [8-12].

Golgripe (Gol Daru):**Dosage form:** Syrups 120 ml**Indications:** anti-bloating, carminative, and anti-intestinal colic in children**Product compound:** Each 5 ml of grapefruit flowers syrup contains 2.3 mg dill seed essential oil (without terpenes)**Standard:** based on 0.04-0.05 g of (volatile oil) per 100 ml of syrup**Active ingredients:** The main ingredients are dill seed essential oil (Carvone), eugenol, anethole, and flavonoids.**Pharmacological effects and mechanism of action:** The active ingredients in dill essential oil have anti-bloating effects and relieve spasms and intestinal cramps. Intestinal colic is caused by intestinal smooth muscle spasm and high acid secretion due to accumulation of gas. When air bubbles are accumulated in a child's stomach, the reflex stimulates acid secretion. This acid secretion is not required, but it stimulates the stomach. At this time, because the stomach is full of air bubbles, the smooth muscle of the child's stomach cannot loosen and causes cramps and spasms. Active ingredients present in dill seeds relieve symptoms of bloating and spasms, and separate the accumulated air bubbles. Sodium bicarbonate also neutralizes stomach acid [13-15].**Dosage:** 1 to 6-month old infants: one teaspoon, 6 to 12-month old infants: 2 teaspoons

These amounts may be repeated during or after each meal for a maximum of 6 times in 24 hours. If gastrointestinal symptoms remain, it is recommended to consult a doctor.

Contraindications and Precautions: This syrup is not recommended in children with renal impairment.**Side effects:** It will have no side effects if used correctly and according to the medical values.**Precautions:** After opening the bottle it should be consumed within a month.

It should be kept in a temperature below 25 °C.

Laxaricin (Dineh trade community of Iran):**Dosage form:** liquid in bottles of 40 g, ready for emulsion**Drug classes:** laxatives

Due to its bad taste, intolerance of patients taking castor oil, and the need to use the oil for its laxative effect for preparation before surgery and radiographic studies, Dineh laxaricin has been reviewed and prepared by Dineh Trade Community of Iran with a more pleasant and tolerable taste for the patients.

Active ingredients: Castor oil contains 75% triricinolein. It is hydrolyzed by duodenal

lipase, and releases ricinoleic acid. Ricinoleic acid has laxative effects.

Indications: as a laxative for preparation before surgery and radiographic studies

Dosage: For adults, 15 to 60 grams and for children older than two years, 5 to 15 grams are recommended. Laxaricin bottle should be filled with hot water and shaken well; a milky emulsion is obtained, tasty and fragrant and ready to be consumed.

Interactions and side effects: No adverse effects have been observed with the recommended dosage.

Contraindications and Precautions:

1- In pregnant women and individuals sensitive to castor oil, this product should not be used.

2- It should be used with caution during menstruation.

3- It should not be used in cases with intestinal obstruction.

Note: Several brands of flavored castor oil in the form of capsule or liquid are produced and consumed in Europe and America; for example, Laxopol in Germany, Neoloid in the US, and Unisoil and Ricifruit in Canada.

Storage conditions: Store in a dark area at temperatures below 40 °C [16-20].

Rosemary Lotion (Barij Essence):

Dosage form: 30 ml drops in the form of topical lotion

Indications: Prevention of hair loss and strengthening of hair, Prevention of eyebrow loss and strengthening it, and anti-dandruff

Product component: rosemary essential oil

Standardized: based on at least 6 mg 8.1 cineole per ml of the product

Active ingredients: 1,8-cineole (eucalyptol), alpha-pinene, camphene, camphor, borneol, bornyl acetate, Beta-Caryophyllene, limonene,...

Pharmacological effects and mechanisms of action:

1- Prevents hair loss and strengthens hair: Terpenes and terpenoids found in rosemary cause vasodilatation, improvement of peripheral blood circulation. These effects are due its stimulation of the skin [21]. In a double-blind, randomized controlled trial, for 7 months, 86 patients with regional baldness (Alopecia areata) were studied in two active and control groups. The control group used thyme, rosemary, lavender, and cedar wood essences in oils containing jojoba and grape seed. They massaged this concoction on their scalp once daily. The control group only massaged the mixture of jojoba and grape seed oil on their scalp once a day. The success of the treatment was separately reviewed by two dermatologists through serial images. The degree of improvement was identified using two methods; calibration method (6-Point

scale) and computerized analysis of traced areas of alopecia. Based on these results, 19 patients (44%) in the active group (n = 43) and 6 patients (15%) in the control group (n = 41) showed improvement (P = 0.008). Photographic degree of improvement was significant (P = 0.05). The authors concluded that aromatherapy is a safe and effective treatment for regional baldness, and treatment with these essential oils is significantly more effective than treatment with carrier oils alone [22].

2- Treatment of dandruff: Rosemary helps prevent premature baldness, and often in combination with borax is used to prevent dandruff [23, 24]. Rosemary is an excellent herb for hair, and stimulates the blood circulation of the skin, and thus, relieves dandruff and helps promote hair growth and conditioning.

Dosage:

1- Strengthening hair and hair loss prevention: 2 times a day, each time 10 or 15 drops for men and 15 to 20 drops for women, rosemary lotion should be massaged into the scalp with fingertips

2- Strengthening eyebrows and eyebrow loss prevention: 2 times a day, each time 1 to 2 drops of rosemary lotion massaged with fingertips onto the eyebrows

Contraindications: Rosemary essential oil should not be used when pregnant, and in people with high blood pressure and migraine headaches

Side effects: It may cause skin irritation when a dosage higher than the recommended dosage is used.

Precautions: 1 - After 4 weeks of regular use the cessation of hair loss is evident and by continued use it will stimulate hair growth. 2 - Avoid contact with eyes. In case of contact with eyes, and eye irritation and tears, wash the eyes with clean water for at least 15 minutes. 3 - At least 2 hours after using rosemary lotion avoid washing the area. 4 - Avoid pressure on the hair (like using headbands, hair pins, and etcetera) and avoid use of hair dryers. 5 - In case of skin allergies, the patient should consult with a doctor or pharmacist.

Lomex (Barij essence):

Dosage form: 15 ml drops

Indications: Treatment of stomach cramps and non-infectious diarrhea symptoms

Composition: Lomex drop is produced from *Satureja hortensis*, of the mint family, essential oil.

Standardized: based on at least 13.5 mg carvacrol per ml of the product

Active ingredients: carvacrol (about 30%), paraseeman (between 20%-30%),...

Pharmacological effects and mechanisms of

action: Reliable sources of plant therapy have attributed the following effects to the summer savory plant: astringent, anti-diarrheal, analgesic, antibacterial, antiviral, anti-inflammatory, and mucus-producing. Essential oil of *Satureja hortensis* contains many of the plant's properties. This essence has significant antibacterial effects, especially on *Pseudomonas*, and *Staphylococcus Aureus*. Previous research has indicated that essential oil of *Satureja hortensis* causes the contraction of the ileal smooth muscle (is antispasmodic), and has anti-diarrheal effects with diphenoxylate. These effects have also been confirmed in clinical trials [25-28].

The antispasmodic and anti-diarrheal effects of *Satureja hortensis* was approved in pharmacological studies [29]. Thus, the clinical trial of oral drops of 5% *Satureja hortensis* in treatment of diarrhea type I was performed, compared with placebo, and the effectiveness of the drug was proven. The assessment of cramps, which is one of the most important and common complaint of patients with diarrhea, it was identified that this symptom in the treatment group during all the examinations after treatment showed significant changes compared to the placebo group. In the treatment group, 48 hours after treatment, this symptom was not observed in

any of the patients, and basically after 24 hours in the treatment group 84.6% improvement was observed. While, in the placebo group, after 24 hours, 40.6% and after 48 hours, 75% showed improvement. Around the world, each year more than one million people suffer from one or more attacks of diarrhea; thus, supplying this product is of great importance. Moreover, acute inflammatory diseases are not only one of the major causes of morbidity in different parts of the world, but are also the main cause of death every year.

Dosage: Adults: 20 drops every 8-6 hours mixed in a cup of water and drank; Children older than 6 years: every 8 hours 5 to 10 drops of the drug mixed in a cup of water and drank

Side effects: *Satureja hortensis* is widely used, and the consumption of this herb has been recommended by the FDA.

Matrica (Barij Essence):

Dosage form: 30 ml drops used as mouthwash

Indications: anti-inflammation and anti-infection of the mouth and gums

Product components: Matrica is made from ½ liquid extract of German chamomile flowers (*Matricaria recutita*) from the Compositae family.

Standardized: based on at least 0.14 mg of chamazulene per ml of the product

Active ingredients: flavonoids, apigenin, luteolin, volatile oils, bisabolol, chamazulene

Pharmacological effects and mechanisms of

action: Chamomile and the resulting extracts are the most consumed herbal medicinal plant and traditional medicine in the world. The German Commission E approved extracts of this traditional herb. The German Commission E has approved the anti-inflammatory of the skin, mouth, and gums, anti-bacterial and bacteriostatic, anti-fever and colds, healing wounds and burns, and antispasmodic and anti-muscle pain effects of this herb. From this commission's perspective, the most important effect of this herb is its anti-inflammatory effect [30-32]. The comparison of the effects of Matrica mouthwash and chlorhexidine mouthwash showed that each could significantly reduce plaque index. Moreover, chlorhexidine prevents the regrowth of plaque significantly more than Matrica. The anti-plaque and gingivitis effects of chlorhexidine have been investigated in many studies. The plaque index observed in the present study after 5 days was 13.3 ± 3.8 units for chlorhexidine and 16.4 ± 4.97 units for Matrica. Several studies have been conducted on the effects of Matrica mouthwash plaque control. Safayhih *et al.*, 1996, showed that the antimicrobial effect of Matrica is due to chamazulene in its

composition [33]. The research by Brinkler *et al.* on the adverse effects of herbal medicines made from *Matricaria chamomilla* showed that, except for nausea in high doses, this plant does not have more side effects than other herbal medicines [32].

Dosage:

As a mouthwash: 25-30 drops three times a day every time mixed in a cup of water and gargled for 1 minute

For internal applications: 20-30 drops mixed in a cup of water and drank after every meal

For external application: depending on the severity and extent of lesions, 10-20 drops in adults and 5-10 drops in children, applied on the area

Side Effects: Chamomile extract and products made from it (like Matrica) have insignificant side effects. During use, allergic reactions and other potential complications should be considered.

Contraindications and Precautions: Individuals sensitive to Asteraceae plants, patients with asthma, and patients taking anticoagulants

Although the product form of this medicine is mouthwash, its oral or topical use does not pose any problems.

Mycoderm (Barij Essence):

Dosage form: 30 ml drops of topical lotion form

Indications: Anti-fungal (tinea versicolor)

Product component: Mycoderm lotion is made from a particular species of Iranian *Artemisia sieberi*.

Standardized: based on 15 to 22 mg alpha-thujone per ml

Active ingredients: The active ingredient in this product is alpha-thujone (C₁₀H₁₆O).

Pharmacological effects and mechanism of action: Fungal skin infection is considered as

a common cause of skin infections [34]. Its prevalence is reported to be 10 to 20% in humans [35].

An in vitro investigation has shown the antifungal effects of *Artemisia annua* extract. The MIC resulted from the effect of this essence on several fungal species were observed as the following:

Types of fungus	<i>Tinea rubrum</i>	<i>T.menta</i>	<i>T.canis</i>	<i>Micros porum gxosan</i>	<i>Candida albicans</i>	<i>Tinea versicolor</i>
MIC results	1.640	1:1280	1:1280	1:2560	1:2560	1:1280

In a double-blind randomized clinical study [36], the effect of Mycoderm lotion and clotrimazole lotion on 60 patients over a period of 4 weeks (2 weeks of treatment and 2 weeks follow-up) were analyzed. Experimental results showed that clotrimazole lotion showed 69% and 61.5% improvement at the end of 2 weeks of treatment and after 4 weeks, respectively. The differences were significant in both periods (P < 0.001). *Artemisia sieberi* lotion after 2 and 4 weeks caused 87.1% and 100% improvement, respectively. The differences were significant in both periods (P < 0.001). It is noteworthy that *Artemisia sieberi* lotion had higher improvement percentage and lower recurrence rate. Furthermore, after 2 weeks of

treatment, there was 50% complete improvement (disappearance of clinical symptoms and negative laboratory test) in subjects who used clotrimazole lotion, and *Artemisia sieberi* lotion provided 70% complete improvement.

Dosage: 2 times per day applied on the area, treatment period of 2 to 4 weeks

Side effects: No specific side effect of the drug is detected, but there is a risk of mild reactions and skin allergies.

Contraindications and Precautions: 1- Do not use during pregnancy and in patients with epilepsy. 2- This drug must be used under medical supervision. 3- Each time, approximately 30 to 35 drops of the medicine should be used.

The antifungal effects of Artemisia essence were discovered and the medicine was produced by the research and development unit of Barij Essence for the first time in the world. All stages of the drug research were conducted in collaboration with the universities of medical sciences of Iran.

Menthol (Poursina):

Dosage form: 30 ml solution

Indications: Menthol is used to relieve nasal congestion due to colds or seasonal allergies. It also treats headaches, and localized and muscle aches of head, face, and neck.

Ingredients: This solution contains 5% to 6% natural peppermint oil (*Mentha piperita*). The plant's leaves contain essential oil and the most part consist of menthol, menthone, and menthofuran.

Pharmacological effects and mechanism of action: Mint plant contains volatile oil containing menthol. With its effect on receptors in the nasal mucosa, this solution reduces cold symptoms such as nasal congestion. Antimicrobial properties of menthol help in inhibition of airway infections which are caused by bacteria and pathogenic viruses. If this product is applied topically, it acts as a counterirritant and analgesic, reduces pain and increases blood flow in the area. Peppermint oil can also cause muscle relaxation.

Contraindications and Precautions: If sensitive to essential oils of peppermint and spearmint plant avoid consuming the product. During use, especially for infants, avoid contact with face, especially the nose. People using this medication should note that this drop is for external application and it is not edible; therefore, it must be kept out of the reach of children. Moreover, this solution should not be used around the eyes. Restrictions for the use of menthol during pregnancy and lactation have not been reported.

Dosage: For nasal congestion, an amount of 3 to 5 drops of the solution is applied on the front of the nose. For treating headaches, 10 to 15 drops is applied on the forehead and temples. In order to relieve localized pain and muscle aches, 10 to 15 drops should be applied on the area. Furthermore, about 10 drops of the solution can be poured in boiling water and used as humidifier. For use in enclosed areas (home and work) 10 to 20 drops can be poured in boiling water or a humidifier so the essence is scattered in the area. To relieve nasal congestion in children, 5 drops of the solution can be dropped on both sides of their pillow during sleep or on their collar. Menthol can be used, in accordance with the above forms, based on the need several times a day [37, 38].

Myrtex (Barij Essence):

Dosage form: 15 ml drops topical lotion

Indications: treatment of oral aphthous ulcers (minor), and herpes

Product components: The active ingredients of Myrtex lotion include the essence of the *Myrtus communis* plant from the Myrtaceae family.

Standardized: based on at least 9 mg cineole per ml of the product

Active ingredients: cineole, alpha-pinene, limonene, and amounts of myrtenol and myrtenyl acetate,...

Pharmacological effects and mechanism of action: oral aphthous lesions are among the most common oral lesions and their clinical presentation is in the form of recurrent ulcer with symptoms such as severe pain (main symptom), and edema.

Myrtex topical solution is prepared from plant oils. Some of these essential oils include alpha-pinene, 1,8-cineole, limonene, linalool, and alpha-terpineol. Several hypotheses have been proposed regarding the mechanism of action of these essential oils:

Pharmacological effects and mechanism of action: 1. This essence has very strong antibacterial, antiviral, and antifungal effects. 2. It has anti-inflammatory effects and is used in the treatment of psoriasis, acne, and

inflammation of the bladder. 3. It is effective in healing of wounds. 4. It is analgesic.

In a clinical study, the effect of Myrtex topical solution with two different concentrations of essential oils (5% and 10%) and in the treatment of oral aphthous lesions was evaluated and compared with placebo. For this purpose, in a double-blind, randomized clinical trial on 137 patients with a clinical diagnosis of aphthous, with continuous sampling method, the patients were placed into three groups in the order of their attendance, A [receiving solution containing 5% essential oils (Myrtex)], B (receiving solution containing about 10% essence), and C (placebo group).

The patient's condition was studied for at least one week after the start of the study, and the duration of the cessation of the burn sensation, and the healing time since the start of treatment were recorded in the questionnaire. Based on the results of this study, the mean duration of the cessation of the burn sensation of minor aphthous in group A was 2.6 days, in group B was 4.7 days, and in group C was 4.1 days. There was a significant difference between the three groups ($P < 0.0005$). Moreover, the mean duration of complete treatment since the onset was 5.4 days in group A, 7.5 days in group B, and 7.3 days in group C. There was a

statistically significant difference between the three groups ($P < 0.001$). The results of this study showed the effectiveness of Myrtex topical solution in reducing the duration of burning and healing time of minor aphthous lesion.

Dosage: 4 to 6 times a day, each time a few drops of the solution should be placed on the location with cotton for 30 seconds.

Side effects: There are no side effects of chronic toxicity in vital organs in long-term use.

Precautions: Using on the first and second day of the beginning of aphthous lesions will have more decisive effect on the recovery. During the treatment period there may be feeling of soreness in places where the lotion is applied that will be quickly resolved [39-41].

Valeric (Mina Pharmacy):

Dosage form: 120 ml syrup

Indications: Sedative and hypnotic, and effective in the treatment of anxiety and insomnia

Containing plant extracts: Valeriana officinalis and Melissa officinalis

Active ingredients: valeric acid

Pharmacological effects and mechanism of action:

Valeriana officinalis extract: Considering that this extract can affect the receptors for gamma-aminobutyric acid (GABA),

adenosine, barbiturates, and benzodiazepines, the sedative and hypnotic effects of its products have been proven. Previous studies show that the extract from the roots of this plant can improve sleep quality in people who have trouble sleeping. This extract also causes a shortening of sleep onset, and improves irregular sleep, wakeup time after sleep, frequent awakening during sleep, and ultimately improves the quality of sleep.

Melissa extract: It has sedative and antispasmodic effects, and is used in the treatment of gastrointestinal and cardiovascular disorders with nervous and anxiety origins.

Vitagnus (Poursina):

Dosage form: 30 mg oral drops

Indications: Vitagnus drop has a role in balancing hormones, and is used in relieving cases of hormonal disorders and premenstrual discomfort (PMS) (especially if caused by an unusual increase in estrogen levels), regulating menstruation, and relieving menopausal disorders.

Product components: This drop contains 8% to 9% hydroalcoholic extract of Vitex agnus-castus fruit.

Active ingredients: flavonoids (casticin, ..., and chrysophanol D), alkaloids (vitisin, and iridoids of aucubin), vitexin and isovitexin (the most important water-soluble flavonoids)

Pharmacological effects and mechanism of

action: This drug contains a variety of natural compounds that are pharmaceutically active. The active compounds of Vitagnus are not hormonal compounds, but they affect the pituitary gland, especially in the production of luteinizing hormone, and cause estrogen decrease and progesterone increase, and therefore, regulate menstruation. The regulating effects of this drug on female hormones and menstrual cycle vary according to each individual's needs. Vitex extract binds to dopamine receptors in the pituitary gland and causes inhibition and regulation of prolactin secretion in patients with hyperprolactin (even in men). Reducing excess levels of prolactin can be effective in the treatment of infertility and premenstrual discomfort. According to studies, Vitex extract is more effective in PMS relief than vitamin B₆. Acne associated with PMS may also be reduced by taking the drug.

Dosage: In general, 40 drops of the medicine should be poured in some water or juice in the morning and drank 30 minutes or 1 hour before breakfast. The usual dose of this medicine is once a day and based on the diagnosis of a physician or pharmacist it may be increased to two or three times a day. If a person is allergic to spices, they can use this drug at night. The effects of drug are usually

observed after two weeks, but to see the conclusive result it must be taken regularly for at least 6 months. After that, to continue the use a physician should be consulted.

Contraindications and Precautions: If the patient is taking hormone therapy or contraceptives, the arbitrary use of these drugs should be avoided.

Side effects: Side effects are rare and include mild skin rash and gastrointestinal discomfort. Allergic reaction has also been reported and it completely disappears by discontinuing of the drug.

Medical interactions: With regard to the performance of this drug on the pituitary gland and the hypothalamus, it interferes with endocrine drugs (hormone therapy, oral contraceptives, and gonadal hormones). Simultaneous application of the drug with bromocriptine and other dopamine agonists (amantadine, chlorpromazine, thioridazine, and trifluoperazine) may lead to increased effects of these drugs and the effects of Vitagnus. Furthermore, the simultaneous application of Vitagnus with inhibitors of dopamine (for example haloperidol) may reduce the effect of Vitagnus.

Use in pregnancy and lactation: The use of this drug is contraindicated during pregnancy. Using the drug during lactation probably causes no problems (even for mothers who

have low amounts of milk, Vitex agnus-castus is recommended), but further studies are needed to confirm the absence of side effects. Therefore, caution should be taken during lactation.

Note: The drug should be kept at less than 35°C. Although the drug does not need to be refrigerated, it is permitted to put it in the refrigerator [42-47].

Hypiran (Poursina):

Dosage form: 30 ml oral drops

Indications: Hypiran drug is used in the treatment of migraine, depression, nervous headaches, neuralgia, insomnia, fear, mental confusion, headaches, and enuresis in children, and can be used during menstruation.

Product component: The drop contains extracts of Hypericum (Hypericum perforatum).

Active ingredients: The main active ingredients of Hypericum perforatum are hypericin, and pseudohypericin.

Standardized: based on 0.1 mg hypericin per ml of the drop

Pharmacological effects and mechanism of

action: Hypericum extract has numerous effects which have been demonstrated through laboratory and clinical experiences.

As antidepressants: Among the underlying assumptions about depression, the brain

amines hypothesis has been best accepted. According to this hypothesis, depression is due to the lack of activity of brain amines such as serotonin, catecholamines, and dopamine. These chemical mediators in the brain neurons are stored in granules. After stimulation of neurons these chemical mediators are released into nervous knots. Most antidepressants increase these amines in the brain cells by inhibition of neuronal return or by inhibition of metabolizing enzymes (MAO)[48]. Several studies have shown that extracts of Hypericum inhibit isoenzymes A and B, and monoamine oxidase enzymes (MAO). As the result of this effect, the amounts of serotonin, norepinephrine, and dopamine mediators in the brain nuclei increase. Thus, mood is improved and depression treated [49]. Later, it was found that in addition to hypericin, flavonoids existing in the plant also inhibit the above mentioned enzymes [48]. At least two other mechanisms for the antidepressant effects of Hypericum have been proposed which include modulation of interleukin-6 and interruption of serotonin return into the nerve.

Dosage: To obtain more significant results from Hypiran drop, it is best to use at least 5 to 6 weeks of continuous treatment, preferably before meals as following: A- The usual amount of drug dosage for adults is 20

to 30 drops 2-3 times a day. For children older than three years, 2 times per day, each time 10 to 15 drops is recommended. With regard to the bitter taste of the drug, it is better to pour it in half a glass of water or juice and then drink it. The best time to consume is before lunch and before dinner. This drug should be taken regularly in cases of migraine. However, after 6 weeks, its amount can be reduced and regulated by the doctor. B- In neurological disorders, after a period of several months, depending on the patient's condition the medication can be gradually reduced or stopped. C- For headaches during menstruation, 5 to 7 days before menstruation, one or two times per day and each time 20 to 30 drops should be taken. If the drug is used at the beginning or during a

migraine attack, or not taken continuously, it will not be effective.

Contraindications and Precautions: It should always be taken with food to prevent gastrointestinal complications.

Side effects: Allergic symptoms and photodermatitis may rarely develop in some patients.

Use in pregnancy and lactation: During pregnancy and lactation the used of this drug is not recommended.

Drug interactions: Hypericum induction of hepatic enzyme cytochrome (P450) may reduce the effect of some drugs, such as cyclosporine, warfarin, digoxin, theophylline, anticonvulsants, and oral contraceptives due to increasing their metabolism [50, 51].

List of Iranian herbal medicines that are used in the form of oral drops, solution, or syrup

Row	Product name	Dosage form	Laboratory	Therapeutic effect
1	Gasterolan	Oral drop	Gol Daru	Antispasmodic, carminative
2	Gastrolit	Oral drop	Barij Essence	Treating the symptoms of irritable bowel syndrome
3	Gripe Water	Oral solution	Dineh Trade Community of Iran	Carminative, soothing cramps
4	Golgripe	Syrup	Gol Daru	Carminative and anti-intestinal colic in children
5	Laxaricin	liquid in 40 g bottles	Dineh Trade Community of Iran	Aperient
6	Rosemary Lotion	Drop	Barij Essence	Hair loss prevention and strengthening of hair
7	Lomex	Drop	Barij Essence	Treatment of stomach cramps, and non-infectious diarrhea symptoms
8	Matrica	Drop	Barij Essence	Anti-inflammation and anti-infection of the mouth and gums
9	Mycoderm	Drop	Barij Essence	Antifungal (tinea versicolor)
10	Myrtex	Drop	Barij Essence	Treatment of oral aphthous ulcers (minor) and herpes
11	Menthol	Drop	Poursina	Treatment of nasal congestion
12	Valeric	Syrup	Mina Pharmacy	Sedative and hypnotic
13	Vitagnus	Drop	Poursina	Balancing of hormones
14	Hypiran	Drop	Poursina	Treatment of nervous headaches, neuralgia

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