

The Healthcare Medicine Institute (HealthCMI)

*presents*

# Safety in Herb-Drug Combinations #4

by  
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# Safety in Herb-Drug Combinations #4

## Review of Pharmacological Actions

Drug interactions are both pharmacodynamic and pharmacokinetic. Pharmacodynamics concern the actions of two or more drugs and pharmacokinetics concern the absorption, distribution, metabolism, and/or excretion of one or more drugs affecting another. Interactions can be additive, synergistic, and antagonistic. Additive interactions are those wherein the effects of two or more chemicals taken together is equal to the sum of taking them separately. Synergistic interactions occur when taking two or more substances together results in a stronger action than the sum of taking them separately. The substances increase each others' effects. Antagonistic interactions are when taking substances together weakens their overall effect.

Chinese Medicine (CM) uses differential diagnosis in determining the appropriate herbs. Herbal choices are based on the functions of the individual herbs and the overall function of a formula. When patients consume western medications with herbs, care must be taken not to alter the effects of the western medicine such that adverse reactions occur. This can happen when the herbal medicine is additive, synergistic, or antagonistic to the effects of the medication. If, however, the medication is of insufficient strength, herbal medicine can potentiate its effects for a better clinical outcome. Herbal medicines are commonly used to protect the patient from the side effects of western medications and to holistically balance the patient's constitution. In general, caution is needed more often in cases of excess rather than deficiency.

Herbal toxicity and herb-drug interactions have not surfaced as a major issue in the USA partially because the list of FDA allowable herbs is highly restricted such that most available herbs do not have harmful reactions with pharmaceuticals. The most common herb-drug interaction concern is that of warfarin (Coumadin). One concern is that herbal medicines may compete with warfarin for absorption. Commonly, the issue is to what extent and which herbs may decrease or increase the efficacy of warfarin. For example, herbs containing vitamin K may be antagonistic and blood invigorating herbs tend to be additive or synergistic.

Herb-drug interactions are not the only concern. There are food-drug interactions and food-herb interactions. Dietary irregularities often complicate treatment. In the case of a patient who consistently drinks excess amounts of coffee and refuses to curb this behavior, the properties of the coffee affect the usage of herbs, particularly those that raise the Qi, strengthen the Yang, warm the interior, or dry dampness.



*Huang Bai*

## Anti-estrogenic drugs & breast cancer

Herbs that strengthen Qi, Blood, Jing and Kidney Yang should be used with caution because they may stimulate estrogen production. Careful diagnosis of the Yin and Yang balance and the Heart and Kidney communication is essential to treating patients who are taking anti-estrogenic drugs. It is recommended that these patients have their estrogen levels checked often.

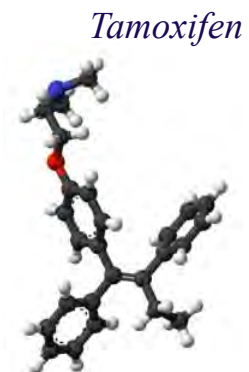
Many tonic herbs have properties that reduce inflammatory responses, benefit the immune system, and encourage the production of red and white blood cells. These responses may be helpful for patients undergoing chemotherapy and radiation treatments.

## Drug

### Breast tissue is stimulated by estrogen Breast cancer cells need estrogen to grow

**Tamoxifen** and **aromatase inhibitors** (Arimidex, Aromasin, Femara) are used to prevent recurrence of estrogen receptor-positive breast cancer in post-menopausal women.

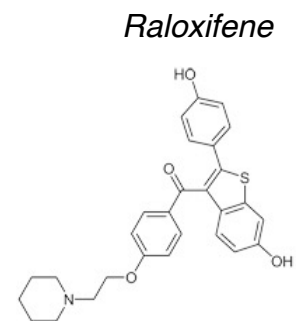
**Tamoxifen (Nolvadex, Istubal, Valodex)** is an antagonist of estrogen receptors in breast tissue and is an agonist in the endometrium. It is used as a form of anti-estrogen therapy for breast cancer because some forms of breast cancer cells require estrogen to grow. Tamoxifen is an estrogen receptor agonist in bone and therefore inhibits osteoclasts. As a result, tamoxifen prevents osteoporosis.



One of the most serious side effects of tamoxifen use is uterine cancer due to its estrogen receptor agonist actions in the uterus. Tamoxifen may also cause cataracts.

## Tamoxifen is estrogenic in the uterus Raloxifene is anti-estrogenic in the uterus

**Raloxifene (Evista)** is often used in the treatment of breast cancer instead of tamoxifen because it has a lower rate of causing uterine cancer. Raloxifene is an oral selective estrogen receptor modulator that exerts anti-estrogenic actions in the breast and uterus but has estrogenic actions in bone. Therefore, raloxifene prevents osteoporosis but runs a lower risk of contributing to uterine cancer than tamoxifen. Raloxifene is contraindicated for pregnant women and may cause deep venous thrombosis and pulmonary embolism.



**Aromatase inhibitors (AI)** are often used to treat breast cancer and ovarian cancer in post-menopausal women. AIs block the synthesis of estrogen by inhibiting aromatase which is the enzyme which converts androgens into estrogens. Estrogen is largely produced in the ovaries in pre-menopausal women but is largely produced in the adrenal gland from the conversion of androgens in post-menopausal women.

## Herb

**Ren Shen** (Radix Ginseng) strengthens the source Qi and calms the Shen. Ren Shen enhances the immune system and strengthens patients undergoing chemotherapy who suffer from leukopenia. It is

used to strengthen the patient so that they may endure the chemotherapy.

Ren Shen is known to be an immunostimulant and raises the total count of IgM. IgM (Immunoglobulin M) is an antibody and appears early in response to infections. Antibodies are produced by the immune system when foreign antigens are introduced into the body. The antibodies kill or neutralize the antigen.

**Shu Di Huang** (Radix Rehmanniae Glutinosae Conquिताe) and **Sheng Di Huang** (Radix Rehmanniae Glutinosae ) nourish the blood, Yin and Jing. Shu Di Huang is stronger at nourishing. Sheng Di Huang cools the heat in the blood. Sheng Di Huang increases levels of adrenocortical hormone which may be partially responsible for its anti-inflammatory effects.

**Dang Gui** (Radix Angelicae Sinensis) promotes blood circulation and nourishes the blood. Combined with **Huang Qi** (Radix Astragali), it helps to raise the RBC (red blood cell) and WBC (white blood cell) counts in patients undergoing chemotherapy.

**Lu Rong** (Cornu Cervi Parvum) strengthens the Kidney Yang and Jing. Lu Rong increases levels of RBCs when used for a long duration.

**Ge Jie** (Gecko) warms the Kidney Yang and nourishes Kidney Jing. Ge Jie increases levels of adrenocortical hormone and white blood cells. Ge Jie increases the phagocytic activity of macrophages.

**Suo Yang** (Herba Cynomorii Songarici) warms the Kidney Yang and restrains the Kidney Yang and Qi.

**Yin Yang Huo** (Herba Epimedii) and **Bai Ji Tian** (Rhizoma Bletillae Striatae ) warm the Kidney Yang and expel wind damp Bi pain. Yin Yang Huo tends to increase libido. Bai Ji Tian has a slower effective action and is maintained in the bloodstream longer.



**Bu Gu Zhi** (Fructus Psoraleae Corylifoliae) warms the Kidney and Spleen Yang and strengthens the bone marrow.

**Xian Mao** (Rhizoma Curculiginis Orchiodis) warms the Kidney Yang and penetrates through the channels.

**Gou Ji** (Rhizoma Cibotii Barometz) warms the Kidney Yang and expels wind damp Bi pain, especially in the spine.

**Xu Duan** (Radix Dipsaci Asperi) warms the Kidney and promotes blood and menstruation. Xu Duan strengthens the Yang, tonifies the Liver and Kidneys, benefits the tendons and bones, calms the fetus, and promotes blood circulation.

**Gu Sui Bu** (Rhizoma Drynariae) warms the Kidney Yang and heals bone fractures.

## Case I

A 53 year old patient has breast cancer and had surgery. She is taking an **aromatase inhibitor (Arimidex)**. She was complaining of fatigue, cold hands and feet, and her eye lids were pale. Her tongue is purple with white coating and the pulse is weak and empty.

Diagnosis:

Liver blood deficiency

Qi and blood stagnation

The patient took **Xue Ge Gao** (Oviductus Ranae from Rana Chensinesis) which are dried asiatic frogs' fallopian tubes. It is often made into sweet soups which are served as desserts in parts of China. The Xue Ge Gao lubricates Kidney Yin and the patient consumed it for several months. Although the patient felt less dry and depleted, it raised her estrogen levels slightly. Therefore, use with caution and monitor estrogen levels carefully.

## Case II

A 45 year old cancer patient is taking **Arimidex** and is suffering from fatigue, loose stools, low appetite, and palpitations. She has a teeth-marked tongue and a weak pulse.

Diagnosis:  
Spleen and Heart Qi deficiency

The patient was given **Ren Shen** (Radix Ginseng) for one month and there was no more loose stool, fatigue, or palpitations. Her estrogen levels were checked regularly and did not rise due to Ren Shen use. The patient had Spleen Qi deficiency so **Ren Shen** was indicated to strengthen Qi and balance general health. However, as with all tonics, it was important to monitor the patient's estrogen levels to ensure that the herbs did not raise them.



*Sheng Di Huang*

## Stop diarrhea drugs

Use caution when using lubricate Yin herbs when patients are taking stop diarrhea drugs. Lubricate Yin herbs may cause damp stagnation and worsen diarrhea.

Care must be taken with bitter herbs as not to deplete the Spleen and Stomach Qi thereby inducing diarrhea.

Harsh purgative and laxative herbs may have antagonistic effects to stop diarrhea drugs and should be used with caution.

Herbs that benefit and lift Spleen and Stomach Qi and herbs that clear damp heat from the middle and lower Jiao (burner) may be helpful in eliminating diarrhea.

## Drug

There are several forms of medications commonly used to treat diarrhea: antibiotics, anti-motility agents, bismuth compounds, and codeine phosphate.

Probiotics such as lactobacillus are often used to address antibiotic induced diarrhea conditions and enzyme supplementation is used in cases of lactose intolerance.

### *Antibiotics:*

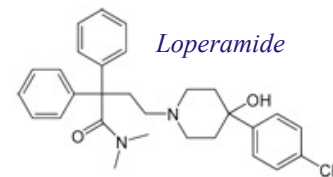
Antibiotics are used for bacterial infections causing diarrhea. Care must be used to not aggravate hemolytic-uremic syndrome by treating E. Coli O157:H7 infections with antibiotics.

Hemolytic-uremic syndrome is characterized by kidney failure, anemia, and a low platelet count. Specific strains of E. Coli express verotoxin (Shiga-like toxin) which induces hemolytic-uremic

syndrome. Antibiotics may increase the expression of verotoxin and worsen the condition.

*Anti-motility:*

**Loperamide (Imodium, Lopex, Fortasec)** is commonly used to stop diarrhea. It is a synthetic opioid drug, although non-euphoric and non-analgesic, that acts as an opioid receptor agonist. It increases the time contents stay in the intestine by decreasing smooth muscle tone on longitudinal muscles and increasing tone on intestinal wall smooth muscles. Loperamide also inhibits the gastrocolic reflex which controls peristalsis.



**Diphenoxylate (Co-phenotrope, Lomotil)** is an opioid agonist which inhibits diarrhea by slowing intestinal contractions and peristalsis. This maintains contents in the intestine for a longer duration as with Loperamide. Since the contents stay in the intestine for a longer duration, more fluid is absorbed from the contents thereby preventing loose/liquid stools.

*Bismuth Compounds:*

**Pepto-Bismol** and **Kaopectate** are over the counter medications that use bismuth subsalicylate as their active ingredient. The mechanism of action is to coat irritated tissues, reduce inflammation, and exert a mild anti-bacterial effect.

*Codeine phosphate:*

**Codeine phosphate** slows peristalsis which allows contents to remain in the intestine longer and therefore more water is absorbed by the body. This prevents diarrhea by firming the stool.

## Herb

**Sheng Di Huang** (Radix Rehmanniae Glutinosae) lubricates blood, Yin and Jing. Sheng Di Huang nourishes Yin and promotes body fluids and therefore treats constipation due to heat entering the large intestine that dries fluids.

Sheng Di Huang also may create diarrhea, particularly in Spleen and Stomach Qi deficiency patients, because of its cloying nature. It tends to stagnate and cause dampness in the middle jiao leading to diarrhea and abdominal fullness. In both its lubricating Yin and its cloying nature, Sheng Di Huang must be used with caution with patients suffering from diarrhea. According to several texts, Sheng Di Huang is contraindicated in patients with diarrhea, abdominal fullness, and Spleen and Stomach Qi and Yang deficiency.

**Bei Sha Shen** (Radix Adenophorae seu Glehniae) moistens the dryness of Lung and Stomach.

**Mai Men Dong** (Tuber Ophiopogonis Japonici) Moistens the Lung and Stomach and calms the Heart.

**Hei Zhi Ma** (Semen Sesami Indici) nourishes the Kidney Jing and moistens the intestine.

**Huang Bai** (Cortex Phellodendri) bitter taste and eliminates Lower Jiao damp heat.

**Long Dan Cao** (Radix Gentianae Longdancao) sedates Liver and GB damp heat and has a very bitter taste. Its cold and bitter nature may deplete Qi and cause diarrhea in patients with Spleen and Stomach deficiency. At doses less than one gram, Long Dan Cao stimulates digestion and increases the secretion of gastric acid from the stomach. In larger doses, Long Dan Cao may irritate the stomach and lead to diarrhea, nausea, and vomiting.

Long Dan Cao has a sedative effect and potentiates barbiturates. In larger dosages, Long Dan Cao may induce drowsiness therefore use caution when a patient takes medications that cause drowsiness.

**Ku Shen** (Radix Sophorae Flavescentis) and **Bai Xian Pi** (Cortex Dictamni Dasycarpi Radicis) are bitter and eliminate damp heat from the skin. Ku Shen is maintained in the bloodstream longer Bai Xian Pi has a faster effective action.

**Shan Dou Gen** (Radix Sophorae Tonkinensis) clears heat toxin sore throat.

**Yu Xing Cao** (Herba cum Radice Houttuyniae Cordate) clears damp heat in the Upper Jiao and promotes urination.

**Da Huang** (Radix et Rhizoma Rhei) and **Fan Xie Ye** (Sennae Folium) purge. Da Huang clears heat toxins and promotes blood circulation. Fan Xie Ye has a faster effective action. Da Huang has a broad spectrum antibiotic effect but must be used with caution in patients taking antibiotics as not to cause diarrhea. Da Huang has hepatoprotective and nephroprotective properties.

Fan Xie Ye is used for treating difficulty with bowel movements characterized by tenesmus, bloating, and gas. This herb is physically light-weight as compared to Da Huang. Its light-weight character indicates that it acts quickly and on a more surface level whereas Da Huang acts more deeply and is more appropriate for pushing out deep obstructions.

**Mang Xiao** (Mirabilitum) purges and moistens the intestine and dissolves hard stool. Mang Xiao is contraindicated during pregnancy. Mang Xiao is a very powerful purging herb and should not be used in patients with diarrhea due to antibiotic intake.

**Yu Li Ren** (Pruni Semen) lubricates the large intestine and promotes urination.

## Case I

A 70 year old female patient suffered from sudden humidity and heat exposure. She became dehydrated but also developed severe diarrhea. She also suffers from nausea and dizziness. She is taking **loperamide** with little results. Her tongue is red with a dry white coating and the pulse is slippery and floating.

Diagnosis:

Wind damp heat attack

She took **Bei Sha Shen** (Radix Adenophorae seu Glehniae) and **Mai Men Dong** (Tuber Ophiopogonis Japonici) for dehydration. Her mouth and tongue are less dry but the diarrhea has increased and is more watery.

Even though the patient has a red and dry tongue coating from dehydration, this patient requires herbal medicine to stop diarrhea more than lubricating Yin herbs which have intensified her diarrhea.

## Case II

A 32 year old male drank 24 bottles of beer in one evening. Since he had approximately ten "water diarrhea" episodes per day, he took over the counter **loperamide** to stop the diarrhea without total effect. It resulted in bloating, abdominal pain, and burning anus. His tongue is red with a moist coating. The pulse is wiry and slippery.

Diagnosis:

Damp heat in the Middle Jiao

He took **Huang Lian** (Gelatinum Corii Asini) and **Ge Gen** (Radix Puerariae) for two days and the condition resolved completely.

The beer causes damp heat stagnation in the Middle Jiao. Use **Huang Lian** (Gelatinum Corii Asini) to eliminate damp heat and **Ge Gen** (Radix Puerariae) to lift Spleen Qi to stop diarrhea.



*Da Huang*



## Beta-blockers, sedative/hypnotics, antidepressants, and insomnia

Use caution when combining beta blockers with calm spirit herbs due to potential slowing of the heart beat.

Calm spirit herbs combined with heat clearing and phlegm dissolving herbs may significantly improve the condition of patients suffering from mental disorders even though they are already taking medications. The additive and synergistic effects of the calm spirit herbs combined with improvements in the differential diagnosis helps to restore balance to the patient.

### Drugs

#### ***GABA agonists:***

GABAergic drugs are GABA agonists which have a relaxing, antianxiety, and sometimes anti-convulsant effect. GABA is an inhibitory neurotransmitter in the central nervous system.

**Zolpidem (Ambien, Adormix, Ambien CR, Lioran, Zoldem, Sucedal)** is a GABA agonist and is a short-acting nonbenzodiazepine hypnotic drug. It is used to treat insomnia. It is also used to improve brain function for patients suffering from brain injuries and, although seemingly paradoxical, is used to revive coma patients. As with many sedative/hypnotic drugs, it may be used to sedate patients.

Short-acting benzodiazepines (the "pams") are GABA agonists and include **Temazepam (Restoril)**, **Lorazepam (Ativan, Temesta)**, and **Alprazolam (Xanax)**. They are commonly used to treat insomnia and have anti-anxiety, muscle relaxant, and anticonvulsant effects.

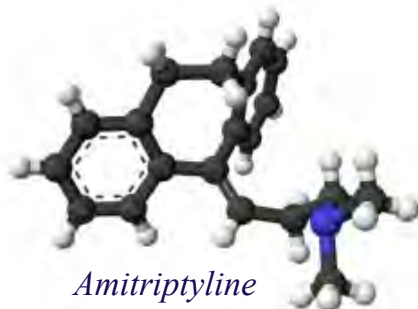
**Atypical antipsychotics:**

**Olanzapine (Zyprexa, Zalasta, Olzapin)** is used to treat schizophrenia and bipolar disorder. Off-label uses include the treatment of panic disorder, anxiety, and post-traumatic stress disorder (PTSD). It is an antipsychotic drug that is classified as a thienobenzodiazepine. The pharmacology for its antipsychotic actions is not completely understood.

Side effects include tardive dyskinesia, restlessness, dry mouth, irritability, constipation, seizures, amenorrhea, lack of emotion, diabetes, hyperglycemia, low blood pressure, weight gain, and impaired thinking and motor skills.

**Tricyclic antidepressants:**

Tricyclic antidepressants include **Amitriptyline (Elavil)** and **Amitriptylinoxide (Amioxid, Ambivalon)**. These are best used as needed and for a short duration. They have side effects such as sexual dysfunction, sweating, dizziness, restlessness, confusion, and irregular heart rhythms. **Trazadone (Oleptro)**, a serotonin antagonist and reuptake inhibitor, is routinely used for insomnia and is an antidepressant, antianxiety drug with hypnotic effects. It tends to cause less sexual dysfunction, constipation, dry mouth, and tachycardia than the tricyclic antidepressants.

**Beta blockers:**

**Beta blockers**, used to regulate the heart beat, are not usually a problem when combined with sedative hypnotics for the treatment of insomnia. However, adverse effects of beta blockers include insomnia, nightmares, hallucinations, and depression.

## Herb

**Suan Zao Ren** (Semen Zizyphi Spinosae) calms and nourishes the Liver and Heart Yin.

**Bai Zi Ren** (Semen Biotae Orientalis) calms Heart Yin and moistens the intestine.

**Yuan Zhi** (Radix Polygalae Tenuifoliae) calms and clears Heart phlegm and open orifices.

**Wu Wei Zi** (Fructus Schizandrae Chinensis) calms and astringes the Heart and stops sweating. **Wu Wei Zi** reduces stomach acid secretion, astringes the Heart and Kidney meridians, and holds the Jing. Wu Wei Zi is often used to treating coughing due to Lung and Kidney deficiency, sweating and thirst, chronic diarrhea, and for calming the Shen in cases of Heart and Kidney Yin deficiency. Deoxyschisandrine, an active ingredient in Wu Wei Zi, decreases gastric acid secretion and may be used in the treatment of gastric ulcers.

**Tian Zhu Huang** (Bambusae Cocreto Sillicea) treats hot phlegm affecting the Heart.

## Case I

A 80 year old male patient is taking a long-acting beta-blocker, **metoprolol (Lopressor, Toprol XL)**, for his irregular heart beat. He is suffering from insomnia, constipation, and his tongue has a red tip and a dry coating. The pulse is small, slow and irregular.

Diagnosis:

Heart Yin deficiency with deficiency heat

The patient was given **Bai Zi Ren** (Semen Biotae Orientalis). His constipation resolved and his sleep improved significantly but his pulse slowed. Lowering the dosage of **Bai Zi Ren** (Semen Biotae Orientalis) returned the pulse to normal.

**Bai Zi Ren** (Semen Biotae Orientalis) lubricated his Large Intestine Yin, nourished the Heart Yin and calmed the mind while the lower dosage prevented the slowing of the heart beat.

## Case II

A 60 year old male patient has excess worrying about everything. He is consistently talking to himself or speaking very loudly. He is taking the antipsychotic drug **Zyprexa**. He is more excited at night and has a tendency to inappropriately remove his clothes and dance. His tongue is dark red with thick yellow coating. The pulse is wiry and full.

Diagnosis:

Excess Heart and Liver fire

Hot phlegm blocking the orifices

Use **Suan Zao Ren** (Semen Zizyphi Spinosae), **Yuan Zhi** (Semen Triticum Aestivum), **Wu Wei Zi** (Fructus Schizandrae Chinensis) and **Tian Zhu Huang** (Bambusaeculeae Pulvis). Regulate each herb dosage dependent on his tongue, pulse and severity of symptoms. The patient showed an 80% improvement after three months when adding the herbal treatment protocol to his existing medication routine of taking Zyprexa.

Although this patient was taking **olanzapine (Zyprexa)**, he continued to have excess fire and hot phlegm blocking the the Heart orifice.

Using calm the spirit and clear hot phlegm herbs helped to control his condition. **Suan Zao Ren** (Semen Zizyphi Spinosae) calms his spirit and Liver, **Yuan Zhi** (Semen Tritici Aestivum Levis) calms the spirit and clears his hot phlegm, **Wu Wei Zi** (Fructus Schizandrae Chinensis) calms the spirit and astringes his Heart, and **Tian Zhu Huang** (Bambusae Coccineus Siliceus) clears hot phlegm and opens the orifices.



*Suan Zao Ren*

## **Blood Thinners & Birth Control Medications and Blood Invigorating and Stop Bleeding Herbs**

When using promote blood circulation (invigorate blood) and stop bleeding herbal medicines one must be very careful prior to surgery. Otherwise, during the operation the surgeon may have difficulty controlling drug dosages. Strong caution is always advised when a patient is using blood thinners. Promote blood circulation herbs may increase the thinning of blood and they dispel blood stasis.

Stop bleeding herbs may reduce the thinning of blood. Stop bleeding herbs must be used with caution with patients taking birth control pills because oral contraceptives increase the risk of venous thrombosis.

### **Drug**

#### *A. Blood Thinners*

Thinning the blood drugs are anticoagulants such as heparin and warfarin (Coumadin) and antiplatelets like aspirin and clopidogrel (Plavix).

Anticoagulants are used for red clots which are comprised of RBCs and fibrin in veins and the heart atria. Anticoagulants are commonly used to prevent thromboses, embolisms, and strokes. Patients with atrial fibrillation and prosthetic heart valves commonly take anticoagulants.

Warfarin (Coumadin) is best suited for anticoagulation in areas of slowly running blood flow. This is typically in veins, pooled blood accumulating behind artificial and natural valves, and pooled blood in dysfunctional cardiac atria. Warfarin functions by interfering with vitamin K metabolism. Warfarin passes through the placental barrier

and is therefore contraindicated during pregnancy. The most common side effect of warfarin is hemorrhage. The effects of warfarin can be reversed with vitamin K. Warfarin interacts with many foods, herbs and spices.

Antiplatelets aspirin and clopidogrel (Plavix) are helpful with white clots in the arteries. They decrease platelet aggregation, inhibit thrombus formation, and are effective in the arteries. Caution is always advised before surgery with these patients and these drugs are typically tapered or stopped prior to a major procedure by the treating MD. Clopidogrel (Plavix) is commonly used to inhibit blood clots in coronary artery disease, cerebrovascular disease, and peripheral vascular disease. The FDA notes that clopidogrel (Plavix) should not be taken with PPIs including Prilosec and Nexium.

### *B. Contraceptives*

Oral contraceptives for females include the combined oral contraceptive pill and the progestogen only pill. The combined oral contraceptive pill (COCP) has both estrogen (oestrogen) and progestin (progestogen). COCPs inhibit follicular development, prevent an LH surge, and prevent ovulation. COCPs also increase the viscosity of cervical mucus which inhibits sperm penetration to the upper genital tract. COCPs may increase coagulation of blood thereby leading to thromboses, embolisms, and myocardial infarction. Smoking increases this risk substantially. COCPs are affected by antibiotics. Antibiotics affect bacterial flora and therefore may diminish absorption of COCPs. The progestogen only pill (POP) contains progestogens. POPs function by thickening cervical mucus and inhibiting follicular development. POPs do not contain estrogen and therefore have a decreased risk of clotting.

Levonorgestrel is a synthetic progestogen. It is used in both COCPs and POPs and is also the active ingredient in intrauterine systems (Mirena) and contraceptive implants (Norplant, Jadelle).

## Herb

**San Qi** (Radix Notoginseng) and **Pu Huang** (Pollen Typhae ) promote blood circulation, stop bleeding, and stop pain. Both have antiplatelet properties and decrease prothrombin time to stop bleeding. San Qi is warming and reduces swelling. Pu Huang is neutral, promotes urination, and is contraindicated in pregnancy because it can stimulate uterine contractions.

**Qian Cao (Gen)** (Radix Rubiae Cordifoliae) stops bleeding, cools the blood, and promotes blood circulation.

**Di Yu** (Radix Sanguisorbae Officinalis) stops bleeding in the Lower Jiao, clears heat toxins and damp heat, and cools the blood.

**Ce Bai Ye** (Cacumen Biotae Oracientalis) cools the blood, stops bleeding, and dissolves hot phlegm.

**Bai Mao Gen** (Rhizoma Imperatae Cylindrica) stops bleeding in the Upper Jiao, cools the Lung and Stomach heat, and promotes urination.

**Zi Zhu (Cao)** (Folium Callicarpae Formosanae ) and **Xian He Cao** (Herba Agrimony Pilosae ) are astringent and stop bleeding. Zi Zhu clears heat toxins. Xian He Cao strengthens the Qi, stops diarrhea, reduces swellings, and kills parasites. Xian He Cao can increase the platelet count to stop bleeding and it contains vitamin K. Warfarin (Coumadin) may be reduced in efficaciousness due to vitamin K present in this herb.

**Bai Ji** (Rhizoma Bletillae Striatae) is astringent, stops bleeding and promotes the healing of flesh.

**Ai Ye** (Folium Artemisiae Argyi) stops bleeding and warms the channels. Ai Ye treats gynecological bleeding due to deficiency and cold.



**Chuan Xiong** (Radix Ligustici Chuanxiong) promotes Qi flow in the blood and effects the surface and upper body.

**Dan Shen** (Radix Salviae Miltiorrhizae) cools the heat, calms the Heart and promotes blood circulation in the small blood vessels. Dan Shen is both antiplatelet and anticoagulant. Dan Shen can significantly increase the effects of warfarin and should be used cautiously in patients taking this medication.

**Yi Mu Cao** (Herba Leonuri Heterophylli) and **Zei Lan** (Herba Lycopi Lucidi) promotes blood circulation and promotes urination. They treat gynecological related blood stagnation and edema. Yi Mu Cao clears heat toxins for treating skin disorders. Yi Mu Cao causes uterine contractions and should be used with caution during pregnancy. Zei Lan is often used for treating traumatic injuries.

**Chi Shao** (Radix Paeoniae Rubrae) cools the blood, reduces swelling and promotes blood circulation.

**Hong Hua** (Flos Carthami Tinctorii) and **Tao Ren** (Semen Persicae) promote blood circulation and break congealed blood. Hong Hua strongly breaks congealed blood. Tao Ren promotes blood circulation and stays in the bloodstream for a longer duration and moistens the intestines. They are contraindicated during pregnancy and caution must be used for patients taking blood thinning drugs.

**San Leng** (Rhizoma Sparganii Stoloniferi) and **E Zhu** (Rhizoma Circuma Ezhu) promote blood circulation and very powerfully break blood stagnation masses. They are contraindicated during pregnancy and must be used with caution in patient taking anticoagulant and antiplatelet drugs.

**Ru Xiang** (Gummi Olibanum) and **Mo Yao** (Myrrha) promote blood circulation, reduce swelling, and heal the skin & ulcerations. Ru Xiang strongly moves and penetrates and is therefore more common in the treatment of musculoskeletal pain and Bi (joint) pain. Mo Yao more

strongly breaks blood stasis. They are contraindicated during pregnancy.

**Wu Ling Zhi** (Excrem. Trogopteri seu Pteromi) promotes blood circulation and stops uterine bleeding due to blood stagnation. It is contraindicated during pregnancy.

**Shui Zhi** (Hirudo) promotes blood circulation and powerfully breaks blood stasis. It is slightly toxic and some reports of adverse reactions to this animal product have been reported. It is one of the strongest herbs to invigorate the blood and is contraindicated during pregnancy. The drug lepirudin (Refludan) was made based on this herb. Lepirudin is a powerful anticoagulant drug which is a direct thrombin inhibitor made from yeast cells. It is nearly chemically identical to hirudin, the main active ingredient in Shui Zhi. Lepirudin is often used when patients cannot tolerate heparin.

**Tu Bie Chong** (Di Bie Chong) (Eupolyphaga/Steleophaga) promotes blood circulation and blood flow through congealed blood and masses. It very powerfully invigorates the blood and is contraindicated during pregnancy.

**Xu Duan** (Radix Dipsaci Asperi) strengthens the Yang, tonifies the Liver and Kidneys, benefits the tendons and bones, calms the fetus, and promotes blood circulation.

## Case I

A 38 year old female patient is taking **levonorgestrel** for birth control. After taking **San Qi** (Radix Notoginseng), she is suffering severe cramps in the lower abdomen and the menstruation was late by one week. The tongue is purple and there is a slippery-wiry pulse.

Diagnosis: Qi and blood stagnation.

Remarks: With birth control medications, all of the regulate blood herbs may confuse bodily responses. Also, it is important to ask

patients whether or not they are taking birth control medications because it is very common.

## Case II

A 54 year male is overweight and has blood clot in his right lower leg with pain and tingling to the foot. He took **clopidogrel (Plavix)** for three months and the pain reduced but there is a persistent perception of tingling to the bones of the foot. Administration of **Chuan Xiong** (Radix Ligustici Chuanxiong) and **Dan Shen** (Radix Salviae Miltiorrhizae) to promote Qi and blood circulation in the small blood vessels quickly eliminated the tingling almost entirely.

Diagnosis: Qi and blood stagnation

Remarks: Adding the herbs reduced the size of the blood clot by 80% within three weeks and therefore the tingling significantly diminished. In cases of obesity, drugs may not be strong enough to dissolve the clot and the herbal medicine's invigorating the blood functions potentiate the effect to remove the clot.



*Chuan Xiong*

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