

# Chapter 5

## — Heat-Clearing Formulas

清热剂

# 叶桂 Yè Guì



叶桂 Yè Guì, also known as 叶天士 Yè Tiān-Shì, 1666 - 1745.

# 叶桂 Yè Gui

Ye Gui, also known as Ye Tian-Shi, was born into a long family lineage of physicians. His father and grandfather were famous pediatricians. Ye began to learn medicine from his father at the age of twelve. When his father passed away two years later, Ye apprenticed with other teachers. Being very intelligent and extremely diligent, Ye absorbed and integrated knowledge from his family and seventeen other masters over the next ten years, and became one of the best physicians in the country.

Ye lived in southern China and practiced medicine during a time when epidemics plagued the country. At the time, most doctors still followed the principles of 伤寒 *shang han* (cold damage), and had little success in treating epidemic illnesses. Observing this, Ye proposed the theories of 温病 *wen bing* (warm disease), and developed additional theories of *Wei Qi Ying Xue Bian Zheng* (Defensive, Qi, Nutritive, Blood Differentiation) and their corresponding treatment strategies.<sup>2</sup>

Ye dedicated his entire life to clinical practice, and did not have time to write about his work. His extraordinary knowledge was organized and published by his apprentices. The most famous works attributed to Ye Gui include *温热论 Wen Re Lun* (Discussion of Warm and Hot Disorders) and *临证指南医案 Lin Zheng Zhi Nan Yi An* (Case Histories from the Compass of Clinical Patterns). The first text focused on theories and treatment principles, and the second text detailed case studies. Credited as one of the most influential physicians in establishing the framework of *wen bing* (warm disease), Ye Gui significantly influenced the practice of traditional Chinese medicine today.

1. Compiled and published between 1745 to 1766 by the apprentices of Ye Gui.
2. The diagnostic principles of *shang han* (cold damage) follow *Liu Jing Bian Zheng* (Six Stages Differentiation), from *taiyang*, through *yangming*, *shaoyang*, *taiyin*, and *shaoyin*, to *jueyin*. The diagnostic principles of *wen bing* (warm disease) follow *Wei Qi Ying Xue Bian Zheng* (Defensive, Qi, Nutritive, Blood Differentiation), from *wei* (defensive), *qi* (energy), and *ying* (nutritive) to *xue* (blood) levels. This latter set of diagnostic theories presented an alternative systematic perspective from which to evaluate the pathology of disease, and significantly expanded the practice of traditional Chinese medicine.



温热论 *Wen Re Lun*  
(Discussion of Warm and Hot Disorders).<sup>1</sup>

Dynasties & Kingdoms	Year
Xia Dynasty 夏	2100-1600 BCE
Shang Dynasty 商	1600-1100 BCE
Zhou Dynasty 周	1100-221 BCE
Qin Dynasty 秦	221-207 BCE
Han Dynasty 汉	206 BCE-220
Three Kingdoms 三國	220-280
Western Jin Dynasty 西晉	265-316
Eastern Jin Dynasty 東晉	317-420
Northern and Southern Dynasties 北南朝	420-581
Sui Dynasty 隋	581-618
Tang Dynasty 唐	618-907
Five Dynasties 五代	907-960
Song Dynasty 宋	960-1279
Liao Dynasty 遼	916-1125
Jin Dynasty 金	1115-1234
Yuan Dynasty 元	1271-1368
Ming Dynasty 明	1368-1644
<b>Qing Dynasty 清</b>	<b>1644-1911</b>
Republic of China 中華民國	1912-Present Day
People's Republic of China 中華人民共和國	1949-Present Day

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# 清热剂 — Heat-Clearing Formulas

**Definition:** Heat-clearing formulas clear heat, purge fire, cool the blood, eliminate toxins, nourish yin, and clear deficiency heat. This method of treatment is known as *qing fa* (clearing), one of the *ba fa* (eight treatment methods) described in the *Huang Di Nei Jing* (Yellow Emperor's Inner Classic) in the first or second century A.D.

The terms heat and fire are frequently used interchangeably in many Chinese medicine texts; however, there are important distinctions. Heat-clearing formulas treat disorders characterized by warmth, heat and fire. These three factors are different manifestations of the same pathogenic factor: warmth represents a mild degree, heat a moderate degree, and fire an intense or extreme degree of heat. All three factors can be seen in exterior and interior heat syndromes, and can be treated by using cold herbs to clear heat. Fire or extreme heat more often consumes and impairs body fluids, leading to dryness, and is more likely to damage yin. The nature of fire is to rise and affect the head and upper parts of the body. Fire can cause bleeding disorders and blood stasis by damaging blood and scorching blood vessels, and is likely to affect the mind, causing *shen* (spirit) disturbance and behavioral disorders. Extreme fire can produce internal wind and cause seizure activity. Fire typically produces a higher fever as compared to warm or heat disorders. It should be noted that the term fire may also be used to describe conditions with gross visible clinical signs such as red eyes (Liver fire), stomatitis-gingivitis (Stomach fire), anxiety, insomnia, hyperactivity, and tongue ulcers (Heart fire), even when there are no obvious systemic signs of heat (fever) present.

The source of heat disorders may be externally contracted or internally generated. External sources primarily refer to the *liu yin* (six exogenous factors). Internal sources may include emotional stress, improper diet and/or overeating of damp and heat-engendering foods, and imbalance of the *zang fu* organs. Once generated, heat may reside in different levels of the body and affect various *zang fu* organs. The *zang fu* organs most frequently affected by heat include the Heart, Liver, Gallbladder, Lung, Stomach, and Intestines. The different levels include *qi* (energy), *ying* (nutritive), and *xue* (blood) levels.

*Wei Qi Ying Xue Bian Zheng* (Defensive, Qi, Nutritive, Blood Differentiation) is a pattern differentiation system for the diagnosis and treatment of exogenous diseases according to *Wen Bing* (Warm Disease) theories. During the Qing dynasty, Dr. Ye Gui introduced the theory that when warm diseases attack the body, they are transmitted through four different levels: the first level is the *wei* (defensive) level, which is associated with the surface of the body, then moving to the *qi* (energy) level, then to the *ying* (nutritive) level, and finally reaching the *xue* (blood) level, which is the deepest layer. In general, heat disorders become more severe and more difficult to treat the deeper they progress into the body. This pattern differentiation system is typically chosen for exogenous disorders that present with acute onset of fever, and provides a way to evaluate the depth, progression and severity of the disorder. It should be noted that in clinical practice, heat disorders do not always begin at the surface level and progress through each of the four levels in that order. The actual order and the initial level affected depends on the type of pathogen, the severity of the infection, the constitution and condition of the patients, and the therapy given.

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*Wei Qi Ying Xue Bian Zheng* (Defensive, Qi, Nutritive, Blood Differentiation) system of diagnosis has been especially helpful in the evaluation and treatment of infectious diseases from a biomedical viewpoint. The clinical signs observed at the *wei* (defensive) level (prodromal stage of acute infectious diseases) relate to abnormalities in the body's defensive and compensatory capability, and there may be no detectable abnormalities on diagnostic tests. When the *qi* (energy) level is affected the signs seen are more severe and reflect disorders of metabolism and physiological dysfunction of internal organs and toxemia; diagnostic testing will frequently reveal abnormalities. In general, at the *wei* and *qi* levels the clinical signs are obvious and potentially reversible; the animal will usually recover if the infection is properly treated. However, once the disorder or infection progresses to involve the *ying* (nutritive) and *xue* (blood) levels, clinical signs may rapidly worsen with a decline in immune function and responsiveness, abnormalities in fluid, electrolyte and acid-base balance, abnormal central nervous system function, abnormal blood coagulation to include disseminated intravascular coagulation (DIC), systemic degeneration and necrosis of the tissues, and internal organ failure.

Heat-clearing formulas have the ability to “clear heat and epidemic toxins,” or “clear heat and eliminate heat toxins,” depending on the individual Chinese medicine text. From a biomedical perspective, epidemic toxins or *wen yi* (warm epidemics) correspond to acute, infectious and contagious pathogens (e.g. bacteria, viruses, fungi) which can be catastrophic in nature and cause severe harm or death in a relatively short period of time. These pathogenic factors are virulent and have a strong tendency to penetrate to the interior of the body to cause interior heat syndromes. In veterinary medicine, diseases such as leptospirosis, tick borne diseases, canine parvovirus, canine distemper, feline panleukopenia, Potomac horse fever, anthrax, viral encephalitis, pigeon fever, and strangles can be considered disorders characterized by epidemic toxins. In human medicine, examples of epidemic heat include plague, measles, encephalitis B, and sudden acute respiratory syndrome (SARS). In general, the term toxin or toxic heat implies infection, the presence of pus, sores, ulcerations, fistulas, necrosis, gangrene and development of abscesses either internally or externally. The term toxin or toxic heat may also include post-surgical septicemia and endotoxemia, toxicity due to drugs, plants, snake or insect envenomization and systemic fungal infections.

Heat-clearing herbal formulas may be categorized similarly to antimicrobial drugs in conventional medicine, as they are used to treat fever, infection and inflammation secondary to infectious and noninfectious pathogens. Heat-clearing herbs have been found to have potent antiviral, antibacterial, antifungal, antipyretic, antineoplastic and immune modulating effects clinically and *in vitro*. In addition, heat-clearing formulas do not select for microbial resistance, nor do they promote residual infection, damage intestinal microflora or negatively impact the immune system, as so many pharmaceutical drugs do.

Heat-clearing formulas can be combined with conventional antimicrobial therapy for synergistic effects to treat acute, chronic, and antibiotic resistant infections. Most heat-clearing herbal formulas contain herbs that are cold and bitter in nature, as are most antibiotics. Overdosing and/or the inappropriate, or prolonged use of heat-clearing herbal formulas will damage the Spleen and Stomach and consume qi and yin. When using heat-clearing formulas, many patients will require the use of herbs or formulas that support pre-existing Spleen and Stomach deficiencies caused by inappropriate diets and feeding practices, and this is especially true if they are used concurrently with antibiotics.

Heat-clearing formulas should be carefully prescribed, used only when necessary, and discontinued or modified as soon as the desired therapeutic results have been obtained. It is essential to correctly identify the pattern of illness in order to choose the correct category of herbal formula to correct the problem and avoid negative effects. It is recommended that the use of heat-clearing formulas not exceed two to six doses (2-3 days) without re-evaluation, especially if combined with

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conventional antimicrobial therapy. Special care and caution additionally should be exercised when treating young, debilitated and geriatric animals. Heat-clearing formulas are contraindicated in yang deficient animals.

## SUBCATEGORIES OF ACTION

Due to the complex nature of heat, six sub-categories of heat-clearing formulas have been created to delineate the specificity of the heat. Heat may be located in the *qi* (energy), *ying* (nutritive), and/or *xue* (blood) levels. It may affect different *zang* (solid) and *fu* (hollow) organs. Lastly, heat can have various intensities (warmth, heat, and fire) and characteristics (excess heat, deficiency heat, heat toxins, and epidemic toxins).

### 1. Qi (Energy) Level-Clearing Formulas

These formulas clear heat, reduce irritability, promote production of body fluids, and relieve thirst. They may be used to treat excess conditions (heat in the *qi* level), or complications of excess and deficiency conditions (heat in the *qi* level damaging qi, yin, and body fluids).

Heat attacking the *qi* level may produce signs and symptoms of high fever, irritability, thirst, profuse sweating in species which do, aversion to heat, a red tongue with white to yellow coating, and a forceful, rapid pulse. Herbs and formulas that commonly clear heat from the *qi* level include *Shi Gao* (Gypsum Fibrosum), *Zhi Mu* (Rhizoma Anemarrhenae), and *Bai Hu Tang* (White Tiger Decoction).

Heat in the *qi* level may damage qi, yin, and body fluids, causing signs and symptoms such as fever, profuse sweating, irritability, a dry mouth and tongue, a red tongue, and a rapid pulse. Herbs and formulas that commonly clear heat, tonify qi, and/or nourish yin include *Shi Gao* (Gypsum Fibrosum), *Ren Shen* (Radix et Rhizoma Ginseng), *Mai Dong* (Radix Ophiopogonis), and *Zhu Ye Shi Gao Tang* (Bamboo Leaves and Gypsum Decoction).

### 2. Ying (Nutritive) Level-Clearing and Blood-Cooling Formulas

These formulas clear heat in the *ying* (nutritive) level, cool heat in the *xue* (blood) level, disperse blood stasis, and eliminate toxins. Common clinical manifestations of heat in the *ying* level include: fever that worsens at night, with or without thirst, irritability, occasional dementia, hyperactivity, insomnia, red skin rash, a deep red tongue and rapid, thin pulse.

*Shui Niu Jiao* (Cornu Bubali) and *Di Huang* (Radix Rehmanniae) clear heat in the *ying* level. Moreover, because heat often attacks the *qi* (energy) level before it attacks the *ying* level, it is important to drive it outward using herbs that clear heat from the *qi* level, such as *Jin Yin Hua* (Flos Lonicerae Japonicae), *Lian Qiao* (Fructus Forsythiae), and *Zhu Ye* (Herba Phyllostachys). One exemplar formula is *Qing Ying Tang* (Clear the Nutritive Level Decoction), which focuses on clearing heat from the *ying* level via ventilating heat from the *qi* level.

Common clinical manifestations of heat in the *xue* (blood) level include: various types of bleeding, red skin rash, petechiae, ecchymosis, hematuria, hematochezia, hematemesis, epistaxis, hemoptysis, coma, insomnia, dementia, hyperactivity, a deep red to purple tongue, and a rapid pulse which can be wiry. In severe cases, extreme fire can lead to the development of internal wind and seizure activity. *Shui Niu Jiao* (Cornu Bubali) and *Di Huang* (Radix Rehmanniae) are frequently used to clear heat and cool the blood. Additionally, because heat in the *xue* level is often complicated by bleeding and blood stasis, it is important to cool the blood, stop bleeding, and disperse blood stasis using herbs such as *Mu Dan Pi* (Cortex Moutan) and *Chi Shao* (Radix Paeoniae Rubra). An exemplar formula is *Xi Jiao Di Huang Tang* (Rhinoceros Horn and Rehmannia Decoction).

### 3. Qi (Energy) and Xue (Blood) Levels-Clearing Formula

These formulas clear heat in the *qi* (energy) level, cool heat in the *xue* (blood) level, as well as purge fire and eliminate toxins. These formulas are suitable for treating excess heat and toxins, or epidemic toxins throughout the body affecting both the *qi* and *xue* levels. Common clinical manifestations

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include high fever, irritability, strong thirst, various types of bleeding, red skin rash, petechiae, ecchymosis, hematuria, hematochezia, hematemesis, epistaxis, hemoptysis, coma, insomnia, dementia, hyperactivity, a deep red to purple tongue, and a pulse that may be any of the following: deep and rapid; deep, fine and rapid; or superficial, big and rapid. In these cases, herbs and formulas to clear heat from the *qi* and *xue* levels are used simultaneously.

Herbs that clear heat from the *qi* (energy) level include *Shi Gao* (Gypsum Fibrosum) and *Zhi Mu* (Rhizoma Anemarrhenae). Herbs that clear heat from the *xue* (blood) level include *Xi Jiao* (Cornu Rhinoceri) and *Di Huang* (Radix Rehmanniae). An exemplar formula is *Qing Wen Bai Du Yin* (Clear Epidemics and Overcome Pathogenic Influences Decoction).

#### 4. Heat-Clearing and Toxin-Eliminating Formulas

These formulas clear heat, purge fire, and eliminate toxins. These formulas generally treat three main conditions: excess heat, fire, and toxins in all three *jiaos*; heat stagnation in the chest and diaphragm; and wind-heat and epidemic toxins invading the head and facial regions.

Excess heat, fire, and toxins in all three *jiaos* is characterized by fever, irritability, restlessness, insomnia, dry mouth and tongue, bleeding disorders, jaundice, skin rash, presence of pus, abscesses, cellulitis, a red tongue with a white to yellow coat and a rapid forceful pulse. *Huang Lian* (Rhizoma Coptidis), *Huang Qin* (Radix Scutellariae), *Zhi Zi* (Fructus Gardeniae), and *Lian Qiao* (Fructus Forsythiae) commonly clear heat, purge fire, and eliminate toxins. An excellent formula that clears excess heat in all three *jiaos* is *Huang Lian Jie Du Tang* (Coptis Decoction to Relieve Toxicity).

Stagnation of heat in the chest and diaphragm is characterized by fever, irritability, ulcerations of the mouth, gingiva and tongue, constipation, and dysuria. *Huang Lian* (Rhizoma Coptidis), *Huang Qin* (Radix Scutellariae), *Zhi Zi* (Fructus Gardeniae), and *Lian Qiao* (Fructus Forsythiae) clear heat, purge fire, and eliminate toxins. *Da Huang* (Radix et Rhizoma Rhei) and *Mang Xiao* (Natrii Sulfas) may be used to clear heat accumulated in the chest and diaphragm causing constipation and dysuria. An exemplar formula that guides and drains heat downward is *Liang Ge San* (Cool the Diaphragm Powder).

Wind-heat and epidemic toxins invading the head and facial regions are characterized by redness and painful swellings on the face, periorbital and temporal dermatitis, as well as a sore mouth and throat. *Niu Bang Zi* (Fructus Arctii), *Bo He* (Herba Menthae), and *Chan Tui* (Periostracum Cicadae) clear wind-heat and toxins affecting the upper parts of the body. *Pu Ji Xiao Du Yin* (Universal Benefit Decoction to Eliminate Toxin) is an excellent formula to dispel heat and toxins outward.

#### 5. Zang Fu-Clearing Formulas

These formulas clear heat from the various *zang fu* organs and their associated channels and collaterals. Clinical signs vary, depending on the severity of the heat and the area affected.

- Heart heat is characterized by symptoms such as restlessness, irritability and *shen* (spirit) disturbance. Herbs and formulas that clear heat from the Heart channel include *Huang Lian* (Rhizoma Coptidis), *Zhi Zi* (Fructus Gardeniae), *Lian Zi Xin* (Plumula Nelumbinis), *Mu Tong* (Caulis Akebiae), and *Dao Chi San* (Guide Out the Red Powder).
- Liver and Gallbladder heat often presents with symptoms such as red, sore eyes, otitis, hypochondriac pain, and can produce aggressive behavior. Herbs and formulas that clear fire from the Liver and Gallbladder include *Long Dan* (Radix et Rhizoma Gentianae), *Xia Ku Cao* (Spica Prunellae), *Qing Dai* (Indigo Naturalis), and *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver).
- Lung heat is characterized by symptoms such as coughing, tachypnea, epistaxis, and dyspnea. Herbs and formulas that clear heat from the Lung include *Huang Qin* (Radix Scutellariae), *Sang Bai Pi* (Cortex Mori), *Shi Gao* (Gypsum Fibrosum), *Zhi Mu* (Rhizoma Anemarrhenae), and *Xie Bai San* (Drain the White Powder).
- Stomach heat involves clinical manifestations of *cheilitis*, gingivitis-stomatitis and foul breath. Herbs and formulas that clear heat from the Spleen and Stomach include *Shi Gao* (Gypsum

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Fibrosus), *Huang Lian* (Rhizoma Coptidis), *Xie Huang San* (Drain the Yellow Powder), and *Qing Wei San* (Clear the Stomach Powder).

- Heat in the Intestines may cause symptoms such as abdominal pain and tenesmus. Herbs and formulas that clear heat from the Intestines include *Bai Tou Weng* (Radix Pulsatillae), *Huang Lian* (Rhizoma Coptidis), *Huang Bo* (Cortex Phellodendri Chinensis), *Bai Tou Weng Tang* (Pulsatilla Decoction), and *Shao Yao Tang* (Peony Decoction).

## 6. Deficiency-Heat Clearing Formulas

These formulas nourish yin, clear deficiency heat, and relieve dryness. They mostly treat late stages of heat syndromes with damages of yin and body fluids. Common clinical manifestations include low-grade fever in the evenings, general weakness, irritability, dryness, insomnia, restlessness, panting excessively (especially at night), dry cough, constipation or dry feces, short urination, heat aversion, seeking cool surfaces/places, increased to ravenous appetite, increased thirst, trembling and jerking during sleep, poor hearing or deafness, hypersensitivity to acupuncture, a red tongue body with little to no coating, and a rapid, thready, thin pulse. Sometimes chronic deficiency heat patients may experience chronic, persistent low-grade fever.

Herbs that clear yin-deficient heat include *Bie Jia* (Carapax Trionycis), *Zhi Mu* (Rhizoma Anemarrhenae), *Di Huang* (Radix Rehmanniae), *Qing Hao* (Herba Artemisiae Annuae), and *Di Gu Pi* (Cortex Lycii). An exemplar formula is *Qing Hao Bie Jia Tang* (Artemisia Annua and Soft-Shell Turtle Shell Decoction).

## CAUTIONS / CONTRAINDICATIONS

Generally speaking, heat-clearing formulas should only be used when exterior symptoms have been resolved and heat has formed in the interior. If the heat is still located at the exterior, then the exterior-releasing method should be used. If the heat is located both at the exterior and in the interior, then use both exterior-releasing and heat-clearing methods. In addition, heat-clearing formulas should not be used on their own if stagnation or hardness has formed in the interior. In such cases, the downward-draining method should be used to eliminate the stagnation. Indeed, timing and correct differentiation of syndromes are very important factors in using heat-clearing formulas.

In addition, please pay attention to the following notes and precautions when prescribing heat-clearing formulas:

- Examine carefully whether the heat syndrome is of deficiency or excess type.
- Examine carefully which *zang fu* organ is most involved in the heat syndrome.
- Heat-clearing herbs may damage the Stomach and consume the yang, so it is often necessary to use Stomach-harmonizing herbs to prevent such side effects.
- Warm herbs are used as corrigent herbs in some heat-clearing formulas to neutralize the body's resistance to cold herbs; however, the dose of these warm herbs should be low.
- As soon as the desired therapeutic results have been obtained, the formula should be discontinued.

## PHARMACOLOGICAL EFFECTS & CLINICAL APPLICATIONS

Heat-clearing formulas, as stated earlier, are divided into six subcategories based on their traditional therapeutic actions. Similarly, these six subcategories of formulas also have contrasting pharmacological effects and clinical applications.

1. **Qi (energy) level-clearing formulas** are used primarily to treat fever, with or without infection.
  - **Fever:** These formulas have marked antipyretic effects, and generally treat fever with or without infection.<sup>1</sup> *Bai Hu Tang* (White Tiger Decoction) is the representative formula, and it has been used to lower temperature associated with viral infection,<sup>2</sup> encephalitis B,<sup>3</sup> and epidemic hemorrhagic fever.<sup>4</sup>

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- **Diabetes mellitus:** *Bai Hu Tang* (White Tiger Decoction) and *Bai Hu Jia Ren Shen Tang* (White Tiger plus Ginseng Decoction) both have marked hypoglycemic effects,<sup>5,6</sup> and have been used successfully to treat diabetes mellitus.<sup>7,8</sup>
2. **Ying (nutritive) level-clearing and blood-cooling formulas** are generally used to lower fever and stop bleeding.
    - **Fever:** *Qing Ying Tang* (Clear the Nutritive Level Decoction) and *Xi Jiao Di Huang Tang* (Rhinoceros Horn and Rehmannia Decoction) have shown marked antipyretic effects to lower body temperature in subjects with artificially-induced fever.<sup>9,10</sup> Clinically, they have been used as adjunct treatment to lower body temperature.
    - **Bleeding:** *Xi Jiao Di Huang Tang* (Rhinoceros Horn and Rehmannia Decoction) has an effect to stop bleeding and has been used successfully to treat thrombocytopenic purpura,<sup>11,12</sup> gastrointestinal bleeding,<sup>13</sup> epistaxis,<sup>14</sup> and other bleeding disorders.
  3. **Formulas designed to clear heat from the qi (energy) and xue (blood) levels** can treat fever and infection. For example, *Qing Wen Bai Du Yin* (Clear Epidemics and Overcome Pathogenic Influences Decoction) may be used to treat epidemic hemorrhagic fever,<sup>15</sup> pyogenic infection,<sup>16</sup> and leptospirosis.<sup>17</sup>
  4. **Heat-clearing and toxin-eliminating formulas** have remarkable antibiotic effects, and are commonly used to treat a wide variety of diseases associated with infection and inflammation.
    - **Infection:** Many of these formulas have excellent antibiotic effects, and have been used to treat various types of bacterial, viral, fungal, and other infections. These formulas have a wide range of clinical applications, including but not limited to common cold and influenza,<sup>18</sup> otitis media,<sup>19</sup> pneumonia,<sup>20</sup> bronchiectasis,<sup>21</sup> respiratory tract infection,<sup>22</sup> infectious parotitis,<sup>23</sup> tonsillitis,<sup>24,25,26</sup> pharyngitis,<sup>27</sup> encephalitis B,<sup>28</sup> cerebrospinal meningitis,<sup>29</sup> and epidemic hemorrhagic fever.<sup>30</sup> Representative formulas include *Huang Lian Jie Du Tang* (Coptis Decoction to Relieve Toxicity) and *Pu Ji Xiao Du Yin* (Universal Benefit Decoction to Eliminate Toxins).
  5. **Zang fu-clearing formulas** have excellent antibiotic and anti-inflammatory effects, and have been used to treat a wide variety of localized diseases characterized by infection and inflammation.
    - **Lung disorders:** These formulas have marked antibiotic effects, and have been used successfully to treat lung disorders such as cough,<sup>31</sup> whooping cough,<sup>32</sup> and pneumonia.<sup>33,34</sup> Exemplar formulas include *Xie Bai San* (Drain the White Powder) and *Bai Tou Weng Tang* (Pulsatilla Decoction).
    - **Stomach disorders:** These formulas have a marked influence to treat various types of stomach disorders, including but not limited to gastritis,<sup>45,36</sup> upper gastrointestinal bleeding,<sup>37,38</sup> erosive gastritis,<sup>39</sup> epigastric pain,<sup>40</sup> and gastroenteritis.<sup>41</sup> Exemplar formulas include *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver), and *Yu Nu Jian* (Jade Woman Decoction).
    - **Liver disorders** (hepatitis) and **gallbladder disorders** (cholecystitis) may be treated with *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver).<sup>42,43</sup>
    - **Intestinal disorders:** These formulas have been shown to treat various types of intestinal disorders characterized by infection and inflammation. Clinical applications include enteritis,<sup>44</sup> colitis,<sup>45,46</sup> ulcerative colitis,<sup>47</sup> dysentery,<sup>48</sup> bacterial dysentery,<sup>49,50</sup> and amoebic dysentery.<sup>51</sup> Two representative formulas are *Shao Yao Tang* (Peony Decoction) and *Bai Tou Weng Tang* (Pulsatilla Decoction).
    - **Kidney disorders:** *Qing Xin Lian Zi Yin* (Lotus Seed Decoction to Clear the Heart) has been used to successfully treat kidney disorders, such as glomerulonephritis,<sup>52</sup> pyelonephritis,<sup>53</sup> and nephrotic syndrome.<sup>54</sup>
    - **Eye disorders** (conjunctivitis) may be treated with *Bai Tou Weng Tang* (Pulsatilla Decoction).<sup>55</sup>
    - **Ear disorders** (otitis media) may be treated with *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver).<sup>56</sup>
    - **Nose disorders** (epistaxis) may be treated with *Xie Bai San* (Drain the White Powder) and *Yu Nu Jian* (Jade Woman Decoction).<sup>57,58</sup>

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- **Mouth and throat disorders**, such as stomatitis,<sup>59,60</sup> gingivitis,<sup>61</sup> periodontitis,<sup>62</sup> periodontal disease,<sup>63</sup> halitosis,<sup>64</sup> infectious parotitis,<sup>65</sup> pharyngitis,<sup>66</sup> and other oral cavity disorders,<sup>67</sup> may be treated with *Dao Chi San* (Guide Out the Red Powder), *Qing Wei San* (Clear the Stomach Powder), *Xie Huang San* (Drain the Yellow Powder), and *Yu Nu Jian* (Jade Woman Decoction).
  - **Male disorders** (orchitis and prostatitis) may be treated with *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver).<sup>68,69</sup>
  - **Female disorders** (mastitis, cervicitis, polycystic ovary syndrome, and pelvic inflammatory disease) may be treated with *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver) and *Bai Tou Weng Tang* (Pulsatilla Decoction).<sup>70,71,72</sup>
  - **Urinary tract infection**: These formulas have a marked antibiotic activity, and have been used effectively to treat urinary tract infection. Three formulas that have been shown to effectively treat urinary tract infection are *Dao Chi San* (Guide Out the Red Powder),<sup>73</sup> *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver),<sup>74</sup> and *Bai Tou Weng Tang* (Pulsatilla Decoction).<sup>75</sup>
  - **Herpes**: *Dao Chi San* (Guide Out the Red Powder) and *Long Dan Xie Gan Tang* (Gentiana Decoction to Drain the Liver) have marked antiviral effects, and have been used to successfully treat herpes infections (oral herpes, genital herpes, and herpes zoster).<sup>76,77,78</sup>
- 6. Deficiency-heat clearing formulas** are mainly used to treat yin deficiency, fever and infection.
- **Fever**: These formulas are commonly used to treat fever of various causes, such as fever associated with cancer,<sup>79,80</sup> post-surgical fever,<sup>81</sup> and fever following bone fractures.<sup>82</sup> A representative formulas is *Qing Hao Bie Jia Tang* (Artemisia Annu and Soft-Shelled Turtle Shell Decoction).
  - **Infection**: Some formulas have antibiotic activity, and have been used to treat viral infections of the respiratory tract<sup>83,84</sup> and pulmonary tuberculosis.<sup>85,86</sup> An exemplar formula is *Qing Hao Bie Jia Tang* (Artemisia Annu and Soft-Shelled Turtle Shell Decoction).

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