

The Bitters

Often the first drug class considered in herbal medicine, Bitters are perhaps one of the most important and fundamental in practice.

Introduction

In modern Western medicine, the digestive system is largely ignored unless it has obvious, usually mechanical pathology. Examples of this are gallstones, ulcers, ulcerative colitis or Crohn's disease, diarrhoea, etc.

However in traditional medical systems, the digestive system often holds an important position. A more subtle (but often just as serious) derangement of function (i.e. physiology) is recognised. This derangement is becoming more and more prominent in the modern world, due to the increasing use of processed foods and numerous other lifestyle factors.

The Digestive System

Digestion commences in the mouth, with the moistening and physical breakdown of food by chewing. There is also the secretion of amylase which is an enzyme which breaks down starch. In the stomach, hydrochloric acid and proteolytic enzymes (break down protein) are secreted. In the small intestine, bile and pancreatic enzymes take effect, breaking down fats, proteins and starches. The nutrients are then absorbed, the waste products are concentrated and then excreted.

The Digestive Process

The above outlines in a very simplistic manner how digestion takes place and where. However the situation is far from being this simple. Digestion in reality is an extremely complex, and only barely understood process. Many other factors are known to be involved in digestion - smell, taste, emotional state, cooking of food, fluid intake, hormones, prostaglandins, and much more. So what is digestion? This may seem like a silly question, but we need to examine this to understand health and disease.

Digestion is essentially the release of nutrients from food, and their subsequent absorption/assimilation, and the excretion of the waste products of this process (as well as some metabolic wastes). Trying to separate any part of the digestive system from another (eg. gallstones having nothing to do with liver or stomach function, as is commonly regarded in modern medicine) is impossible. Indeed, trying to separate digestive function from the function of the rest of the body is impossible. Digestion and nutrition forms the fundamental basis of health and disease. If the digestive process is not functioning as it should, the impact is usually not just localised, but can extend to any part of the body, causing or contributing to almost any condition.

This is not to say that all health problems are solely digestive related. Far from it. You would have a hard case showing that congestive cardiac failure was solely due to an under functioning digestive system. However digestive function can play a role in many diseases which at first seem totally unrelated.

What Goes Wrong (The Pathophysiology) ?

Most disorders of the gastrointestinal system are functional, or functionally related. Structural disorders are much less common, and include some rare genetic disorders and trauma-related damage (eg. part of stomach or colon removed due to car accident). Like most things, they begin subtly and surreptitiously, and are just a minor annoyance in the early stages. By ignoring them, or covering the symptoms, the pathophysiology progresses, until the symptoms become impossible to ignore, or until normal, visible pathology (such as quantifiable gallstones or gastritis, etc) develops.

The way the process becomes disordered is often difficult to trace. Due to the hugely complex nature of the digestive process, there are many possibilities for dysfunction at any stage, and this of course then impacts on the whole system.

The end result however, is often very obvious to the trained herbalist. Areas may be over functioning or under functioning. This may manifest in numerous ways.

The Complaint (The Symptomatology)

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The Bitters

The Bitters are herbs with a bitter taste, and a corresponding “bitter” effect (discussed shortly). If taken to the extreme, a huge number of herbs can be classed as bitters, however some are particularly notable. The herbs with secondary or tertiary bitter actions should however be remembered, as this may influence the choice of one herb over another when making a formula for a particular patient. Another thing to note is that the Bitters and the Hepatics are very closely related in many ways, and there is often much crossover of action.

The Bitters have a general “tonifying” action on the digestive system and its function. This means that they improve the function in a general and balanced way. Rather than being specific for one aspect of disordered physiology, their activity is complex, and the end result is a broad “strengthening” effect on the digestive system and digestive function. Bitters can usually be of use in all of the problems listed above under “Symptomatology”, and more. They may not be our only treatment, but they can provide a core for many problems, and an adjunct for many others.

The Bitter Taste & Action - How It All Works

The bitter taste is at the heart of the medicinal activity of these herbal medicines. A bitter herb largely works through stimulating bitter receptors on cells in the mouth, leading to the initiation of a nerve impulse, which leads to multiple effects on digestive function, including the well known increase in the secretion of the hormone gastrin.

The end result is actually a priming of digestive function. This priming seems to involve all aspects of digestive function, not just one or two. A summary of some of the well documented physiological responses elicited from taking bitters is illustrated in Figure 1 on the next page.

It is essential to remember that taste is extremely important. If the patient does not experience the bitter flavour, then the medicine will have considerably reduced physiological effect. Although the bitter medicine's overall activity can be moderated by the inclusion of other complementary herbal medicines, the flavour generally should not be disguised with more "pleasant" tasting herbs or with flavouring mixtures. It should not be put into juice, or diluted in so much water as to make the taste too weak. It generally should not be included in tablets or capsules, or quickly swallowed by the patient – preferably the dosage will be mixed with the appropriate amount of water, and sipped slowly over 10-15 minutes, usually before meals (to prime digestion for the forthcoming meal).

Complaints about the taste are common when commencing treatment with bitters. The average human living in a modern industrialised nation has lost the appreciation for the bitter taste – rarely is this flavour found in their diet. Reassure them that the taste is essential, and that they will become accustomed to, and sometimes even enjoy, the flavour over time. It is part of the education and life-changing process involved in healing.

ACTION	RESULT
Increase appetite	Makes them useful in anorexia (decrease or lack of appetite) due to prolonged illness, and in anorexia nervosa (a complex physical and psychological syndrome leading to self-induced starvation).
Increase gastric acid and pepsin secretion	Leads to improved digestion of proteins.
Increase pancreatic digestive secretions	Leads to improved digestion of all macronutrients (proteins, lipids, carbohydrates). Improves duodenal health, by normalising pH.
Increases intestinal juice production	Improves general digestion.
Increases hepatic bile flow and dilution	Allows better digestion/assimilation of fats. Improves elimination of waste products from liver. Reduces likelihood of developing gallstones. Leads to a mild laxative effect.
Increases intrinsic factor secretion	Helps improve vitamin B12 absorption.
Increases insulin & glucagon secretion	Effects are not fully understood, but seems to improve blood sugar regulation under some circumstances.
Increases muscle tone of lower oesophageal sphincter	May reduce problems with oesophageal reflux.
Increases muscle tone of the stomach & small intestine	Improves atonic constipation.
Increases cell division & growth of gastric and duodenal mucosa	Useful in promoting healing of mucosa.
Increases cell division & growth of pancreas	Useful in late-onset diabetes (NIDDM).

Figure 1. The Primary Physiological Responses from Using Bitters.

The Use of Bitters (Clinical Applications)

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Conclusion

Bitters can be applied in the primary form (i.e. a herb with predominantly bitter activity is used alone), or as secondary agents (i.e. a herb with predominantly bitter activity forms a part of the treatment, or herbs are chosen because they also have a bitter activity as well as another primary action). But in whatever capacity they are used, bitters are an extremely useful tool in modern medical herbalism. They offer the safest, most basic “tonic” activity, and can be the pivotal medicines in many disorders, even those seemingly not related to digestive function.