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## Review

# Traditional and modern aspects of hemorrhoid treatment in Iran: A review

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#### ABSTRACT

Hemorrhoidal disease is a prevalent anorectal condition which is generally not managed well with current pharmacologic interventions. However, in Iranian traditional medicine (ITM) there are numerous plants with hemorrhoid-healing properties. The present research assembled plants with hemorrhoid-healing properties in ITM; their related pharmacological effects, phytochemical constituents and mechanisms of action in the modern medicine were also gathered. For this purpose, leading ITM textbooks were searched for plants with hemorrhoid-healing effects. Further, *in vitro*, *in vivo* and clinical studies on the most cited species were considered using scientific databases. Studying ITM textbooks revealed 37 medicinal plants with hemorrhoid-healing effects. Among the mentioned herbal medicines, six species, including *Allium ampeloprasum*, *Phyllanthus emblica*, *Aloe vera*, *Terminalia chebula*, *Vitis vinifera* and *Commiphora mukul*, had the largest number of related pharmacological effects documented in scientific databases. These herbs from ITM should be considered as important resources for producing novel drugs for hemorrhoid treatment.

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#### 1. Introduction

Hemorrhoidal cushions are normal anatomic structures located in the anal canal. The vascular structures within these cushions aid in maintaining anal continence by preventing damage to the sphincter muscles [1,2]. Many risk factors are involved in the pathological changes of normal hemorrhoidal cushions, such as constipation, diarrhea, spicy diet, alcohol consumption, low-fiber diet, aging and chronic straining. These risk factors lead to sliding hemorrhoidal cushions, intensified pressure in the hemorrhoidal plexus, and swelling and protrusion of the hemorrhoidal mass [3–6]. Symptoms of hemorrhoid complaints may include bleeding, pruritus, inflammation, discharge and pain; hemorrhoids are often classified as internal or external, and graded into 4 categories [7,8]. Among adults (20-85 years old) in Austria, a prevalence of 39% is reported for symptomatic hemorrhoids of grades I to IV [9]. Classical treatments for grades I and II, in order to reduce symptoms, include increasing water intake, establishing a high-fiber diet and applying topical therapies like steroids and anesthetics. Treatment for grades III and IV may include non-surgical and surgical interventions [10,11]. Traditional medicine has been a valuable resource for developing new clinical drugs [12,13]. Iranian traditional medicine (ITM) flourished under famous practitioners such as Avicenna and Rhazes, in medieval times (865-1037 AD) [14-17]. Bavasir, the traditional term for hemorrhoidal disease in ITM, is classified into different types based on shape [18]. Hemorrhoid shape is ascribed to improper distribution of humors in the body. The role of these humors in development of Bavasir is also explained in ITM [18-20]. For the management of this disease, ancient practitioners have recommended various strategies, including lifestyle optimization, phytotherapy and surgery. In the first step, lifestyle modification is suggested. Among mentioned treatments, phytotherapy was the main recommended remedy for hemorrhoids [18,19,21,22]. In current medical approaches, many complications of hemorrhoids are not managed well [2]. The medicinal herbs of ITM, having anti-inflammatory, antibleeding, analgesic, wound healing and venotonic properties, may be effective for hemorrhoid treatment [5]. This study is designed to investigate the most cited herbs for their hemorrhoid-healing effects by reviewing ITM textbooks and current researches.

# 2. Traditional aspects of hemorrhoids treatment in ITM

Review of ITM textbooks revealed 37 plants with hemorrhoid-healing properties. The traditional and scientific names, families, temperaments, parts used and ITM doses are given in Table 1.

Persian scholars have divided *Bavasir* into six types based on their shapes: wart form, grape seed form, berry form, palm form, fig form and bubble form [18,19]. According to ITM, ailments are due to improper distribution of *Akhlat* (humors) in the body. There are four humors: *dam* (blood), *sowda* (black bile), *safra* (bile) and *balgham* (phlegm) [18,19,21–33]. ITM textbooks have emphasized

that *sowda* is the main cause for the development of *Bavasir* [18,21,22]. Other humors involved in the pathogenesis of the most common types of *Bavasir* are blood in berry form, black bile/blood in grape seed form and phlegm in bubble form.

The traditional treatments of *Bavasir* were body purification from *sowda*, controlling the function of liver, spleen and gastrointestinal tracts, phytotherapy and surgery.

# 2.1. Body purification from sowda

Sowda is believed to be the primary and dominant cause in the pathogenesis of the disease. So cleansing the body of this humor is considered to be an important step in treatment. For this purpose, Hijamat (cupping) and consumption of sowda-reducing plants like Terminalia chebula and Phyllanthus emblica are suggested [18–22].

## 2.2. Control the function of liver, spleen and gastrointestinal tracts

Because of the special importance of the above organs in the production of *sowda*, recovery of proper organ function is also an objective of treatment [21,22].

### 2.3. Phytotherapy

Ancient physicians have prescribed different plants for various purposes, such as reducing *sowda* level in the body and management of *Bavasir* complications [18–27,34,35].

# 2.4. Operation

Removal of hemorrhoidal cushions was proposed when other strategies had failed to treat *Bavasir* [18,19,21,23].

# 3. Modern aspect of hemorrhoid treatment

#### 3.1. Modern classification of hemorrhoids

According to modern medicine, hemorrhoids are often classified as internal or external. Internal hemorrhoids are classified into four categories based on the progression of the disease (grades I–IV). Grade I: bleeding of hemorrhoidal cushions without prolapse. Grade II: hemorrhoidal cushions prolapse with straining and return to their original position spontaneously. Grade III: hemorrhoidal cushions prolapse during defecation and need assistance to return. Grade IV: irreducible prolapse of hemorrhoidal cushions. External hemorrhoids are usually asymptomatic except when they become thrombosed [7,8].

# 3.2. Pathogenesis of hemorrhoids

Pathogenesis of the disease has not been completely understood but mentioned risk factors make some pathological changes. For example, intensified pressure in the hemorrhoidal plexus can

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