

# Botanicals for Common Infections in Women



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PROFESSIONAL RESOURCES

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# Introduction

Cystitis, herpes simplex, yeast and bacterial vaginitis, and human papilloma virus are infections commonly found in women. While there are numerous prescription medications to manage and treat these issues, there are also many evidence-based natural treatments that can provide similar results with fewer side effects. Some of the most effective botanicals for these infections include cranberry, Oregon grape root, uva ursi, green tea, St. John's wort, lemon balm, cruciferous extracts, turmeric, tea tree, goldenseal, garlic, and pipsissewa.

## Yeast Vaginitis

### *Garlic/thyme cream case study*

Yeast vaginitis is a common issue for women. One of the most effective botanicals for treating yeast infections is garlic. A case study evaluated 32 women with yeast vaginitis, assigning them to various treatment groups. For seven nights, one group used a vaginal cream that contained garlic and thyme while another used vaginal cream with an antifungal clotrimazole. A statistically significant improvement in clinical symptoms was shown in both groups after treatment. In fact, the garlic/thyme group reported a greater decrease in vulva erythema compared with the clotrimazole group. There was no worsening of symptoms in either group; however, the garlic/thyme group did exhibit more side effects, including vaginal irritation.<sup>1</sup>

### *Additional vaginal agents*

Historically, the following botanicals and dosages have been used to treat yeast vaginitis:

- Berberine (goldenseal, Oregon grape)—in vitro antifungal; candida albicans.
- Calendula—has historical use as a topical remedy for local infections, wounds, and injuries. It can be used as a vaginal lotion or cream and can deliver immediate relief until antifungal medications take effect.
- Garlic—in vitro inhibitor of candida albicans. 24 out of 26 strains of candida have been shown to be sensitive to garlic. The typical dosing of garlic has been intravaginal.
- Tea tree—in vitro; inhibitor of candida albicans. It is often used as a topical gel or vaginal capsule.
- Homeopathics—borax, hydrastis, berberis, kreosotum, and others.

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<sup>1</sup> Iran J Nurs Midwifery Res. December 2010;15(suppl 1):343-349.

- Povidine iodine—paint cervix and vagina with solution on day one. Applicator gel (5 gm) bedtime, douche next morning using 2T/1qt water bid for six weeks.<sup>2</sup>

### ***Lactobacillus species/strains anti-pathogen properties***

There are specific lactobacilli species and specific strains of those species that have anti-pathogen properties in the vagina. Many of these vaginal-specific lactobacilli species can help restore normal vaginal ecology. These strains include:

- L rhamnosus GG
- L acidophilus NCFM
- L casei Shirota
- L. reuteri MM 53
- L. casei CRL-431
- L. rhamnosus GR-1
- L fermentum RC-14

Others to consider include:

- L plantarum 299V
- L salivarius

### ***Candida vaginitis: Sample treatment plans***

In treating candida vaginitis, it is important to establish if the problem is acute or chronic.

For acute infection, the following is a recommended treatment plan:

- Boric acid suppositories, twice per day for 3–7 days.
- Yogurt 8oz daily and/or Lactobacillus species/strains combinations for 2 weeks.

For chronic, recurring yeast vaginitis, treatment time is lengthened. The following is a recommended treatment plan:

- Boric acid suppositories: Administer twice per day for 2–4 weeks followed by a prophylactic plan. After the 4 weeks, in a menstruating woman administer once per day, only during menses for the next 4 cycles. In a non-menstruating woman, administer for 5 days, once per month.

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<sup>2</sup> Calif Med 1969;110

- Yogurt 8oz daily and/or Lactobacillus species/strains combinations for 2–6 months.
- Consider systemic: Garlic, Oregon grape, and goldenseal.

## Bacterial vaginosis

### *Garlic*

The most effective botanical that can be used to treat bacterial vaginosis is garlic. Garlic is antibacterial, antiviral, and antifungal, but it has also been shown to be effective against many antibiotic-resistant organisms. Because bacterial vaginosis is on the list of antibiotic-resistant organisms, garlic can be an effective treatment option to limit the reoccurrence of this infection. The major growth-inhibitory component in the garlic extract is allicin.

### *Berberine containing plants and tea tree*

Other botanicals that can be used to treat bacterial vaginosis include plants that contain berberine and tea tree. Berberine is effective at treating infections involving mucosal surfaces such as the mouth, throat, stomach, vagina, and bladder. Tea tree is not just antifungal, it's also antibacterial.

### *Vitamin C*

Ascorbic acid administered vaginally can also be effective for treating bacterial vaginosis. It is important to note that these inserts must be prepared in a certain way so that the dissolution rate isn't too acidic: oral supplements should not be used vaginally.

A case study compared the effects of administering vitamin C vaginally. Subjects were divided into two groups. The first group was given 250mg of vitamin C vaginally for 6 nights, while the second group followed the same regimen, but was given a placebo. Significant improvement was shown in the group given the vitamin C versus those given the placebo

	<u>Vitamin C group</u>	<u>Placebo group</u>
No clue cells	79%	53%
No bacteria	77%	54%
L. reappeared	79.1%	53.3%
pH > 4.7	16.3%	38.6%
BV persisted	14%	35.7% <sup>3</sup>

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<sup>3</sup> Eur J Ob/GYN 2004

## *Sample treatment plans*

Bacterial vaginosis can be a stubborn, recurring issue that can easily become chronic without treatment. For this reason, an aggressive approach can be most effective.

### *Treatment option 1*

- Vitamin C tablet for 6 days followed by one boric acid supplement per day for 1 week
- Vaginal-specific lactobacilli species for a minimum of 4 weeks
- Systemic immune support:
  - Oregon grape, Goldenseal: 1tsp, bid

### *Treatment option 2*

- Metronidazole gel: 1g, bid for 5–10 days
- Concurrent oral lactobacillus species/strains: 8+ billion or more daily for 2–4 weeks
- Follow metronidazole with lactobacillus suppositories: Once per day for 7–14 days, plus one boric acid supplement per day for 7–14 days
- Provide systemic immune support with Oregon grape, garlic, goldenseal
- Follow an immune supportive diet

## **UTI**

### *Cranberry*

Cranberry has a long history of being utilized to treat issues such as urinary tract infections. A case study evaluated the effects of cranberry on 20 people who did not have active urinary tract infections, and who were not taking antibiotics. In phase one, 3 caps containing 275mg of a mixture of dried whole cranberry extract and 25mg of a concentrate of cranberry extract were administered. In phase two, subjects were not given cranberry on day one and were given 900mg of cranberry preparation on day two.



Results of the study revealed that in phase one, 7 of 20 individuals (35%) had anti-microbial activity against *Escherichia coli*, 13 of 20 individuals (65%) had anti-microbial activity against *Klebsiella pneumonia*, and 9 of 20 individuals (45%) had antimicrobial activity against *Candida albicans*. In phase two, 23% showed antimicrobial activity against *E. coli*, 33% against *C. albicans*, and 67% against *K. pneumoniae*.<sup>4</sup>

Another study looked specifically at postmenopausal, Greek women who had at least three UTIs in the previous year or at least two UTIs in the previous six months. Subjects were given 400mg of cranberry extract twice per day over six months. During the six months while taking the cranberry extract, none of the women in the study reported having a UTI, and almost all the urine cultures were sterile or normal.<sup>5</sup>

### *Uva ursi*

Another botanical to consider when treating UTIs is *uva ursi*. *Uva ursi* has high tannin content and is considered an antimicrobial urinary tonic. It is a diuretic, which can be pivotal in helping to clear UTIs more quickly. Its constituents include arbutin and its actions are antiseptic, which can be most effective in an alkaline environment. It also contains methylarbutin, tannins, ursolic acid (diuretic), phenolic acid, resins, and flavonoids (quercetin and isoquercetin). *Uva ursi* historically has been used to treat acute cystitis, pyelonephritis, and vague bladder spasms and pain with urination.

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<sup>4</sup> eCAM 2010;7(2):227-232 doi:10.1093/ecam/nem183

<sup>5</sup> J Altern Complement Med 2009;15(11):1155.





A case study comprised of 57 women looked at the preventive effects of uva ursi. At the end of the year, 5 of the 27 women who did not take uva ursi had recurrences, and none of the 30 women receiving the extract had recurrences.<sup>6</sup>

Uva ursi can be administered as freeze-dried leaves in amounts of 500–1000mg per day or as a tincture in 1–1.5 tsp doses, tid. Uva ursi is contraindicated in pregnancy.

### *Goldenseal*

The active constituent in goldenseal is berberine, which inhibits bacteria from adhering and is also antibacterial in vitro against *E. coli*. Goldenseal can be given in the freeze-dried form three times per day, in 500–1000mg doses. In tincture form, it can be administered in 1–1.5 tsp doses, tid.

### *Oregon grape*

The active constituent in Oregon grape is berberis aquifolium. It is antibacterial against *E. coli* and inhibits bacteria from adhering to the epithelial surface.

### *Pipsissewa*

The active constituent in pipsissewa is arbutin. It is antiseptic, antibacterial, astringent, and a diuretic. Historically, indications for this herb were for acute cystitis or chronic cystitis, frequent urination, and kidney infections.

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<sup>6</sup> Larsson B, Jonasson A, Fianu S. Prophylactic effect of UVA-E in women with recurrent cystitis: a preliminary report. *Cufr Ther Res* 1993;53:441-443.

## *Marshmallow*

Marshmallow is often included in UTI formulas because it has mucilaginous properties. It reduces inflammation and irritation in the lining of the bladder and urethra. It is most commonly administered in capsule form.

## *Buchu*

Buchu can be effective in UTI formulas because it has flavonoids, mucilaginous constituents, and because it's a diuretic. It can be administered in 500–1000mg doses three times per day, or in 1–1.5 tsp doses tid.

## *Sample treatment plan for acute UTI*

- Increase water (8 or more glasses daily)
- Increase cranberry juice (16oz daily)
- Vitamin C (2,000mg every 2 hours for 2 days, then 2g tid for one week)
- Botanicals to consider: Cranberry, goldenseal, Oregon grape root, buchu, uva ursi, pipsissewa (every 2 hours for 2 days, then 2 doses three times per day for one week)

## *Sample treatment plan for chronic UTI*

- Void upon urge, after intercourse
- Use condoms during intercourse
- Use staphysagria after intercourse
- Increase fluids
- Take cranberry extract, 400mg, bid
- Take mannose powder, 1 tsp per day
- Use probiotics, 8+ billion daily (urogenital specific species such as intravaginal lactobacillus spp)

## **HPV**

HPV is believed to be a leading cause in cervical cancer in women, but it can also cause throat and anal cancer. Treating HPV-infected cells may help boost immunity by destroying the cells within which the HPV resides, thereby releasing HPV to disease-fighting dendritic cells and macrophages.

## *Naturopathic treatment*

There are specific ways to treat HPV when the virus is directly affecting the cervix. Some of these treatment options include smoking cessation, safe sex practice and education, and providing support to the immune system. It is also important to directly treat the HPV and dysplasia.

### *Three month oral protocol*

Treatment options for HPV often involve supporting the immune system. This can be done with a number of different botanicals that have historically been shown to reduce viral infections in certain locations, such as the cervix. Some effective protocols for maintaining a healthy immune system are listed below.

#### *Botanical protocol 1*

- Red clover
- Dandelion root
- Licorice root
- Goldenseal root

#### *Botanical protocol 2*

- Thuja
- Echinacea
- Goldenseal root
- Ligusticum

The herbals can be used in equal parts in tincture form. For long-term treatment, tinctures can be administered in 1 tsp doses twice per day.

## *Cervical dysplasia research*

More specific agents that can be used to treat HPV include green tea, coriolus versicolor, and indole-3-carbinol (I3C/DIM).

### *Green tea*

A case study consisting of 51 patients with cervicitis to CIN II were divided into four groups and compared to 39 controls. The first group was given poly E ointment vaginally two times per week, the second group was given poly E plus ointment poly E capsules, the third was given poly E capsules, and the fourth was given epigallocatechin gallate (green tea) capsules.



The first group showed a 20/27 response rate, the second showed a 6/8 response rate, the third had a 3/6 response rate, and the fourth had a 6/10 response rate. The overall response from the group was 69%, with 35/51 of the green tea extract group showing response versus a 10% response rate (4/39) in controls ( $P < 0.05$ ).<sup>7</sup>

Epigallocatechin gallate, a compound in green tea, has been evaluated on the cells of the cervix and has been shown to inhibit HPV and induce cell death of abnormal cells, decreasing gene expression caused by HPV, and slowing down cell cycle changes.<sup>8</sup>

A randomized, controlled trial looked at 502 men and women age 18 and older with 2 to 30 anogenital warts. Subjects applied either a 10% or 15% sinocatechins ointment or placebo three times per day for a maximum of 16 weeks until there was a clearance of warts. After this, subjects had a 12-week follow-up period. Complete clearance of all baseline warts was shown in 53.6% of subjects in the 10% ointment group and in 54.9% of subjects in the 15% ointment group. Statistically significant differences in clearance rates appeared after 6 weeks of active treatment.<sup>9</sup>

### *Coriolus versicolor*

Another treatment option for HPV is coriolus versicolor. A case study evaluated the effects of this mushroom on 39 patients with biopsies that confirmed LSIL. Of the 39 patients, 21 were controlled and 18 took coriolus in 3g dosages daily for one year. Of the 18 patients who took

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<sup>7</sup> Eur j cancer prev 2003;12(5):383-390

<sup>8</sup> Int J Gynecol Cancer. 2010 ;20(4):617-624

<sup>9</sup> Br J Dermatol. 2010 Jan;162(1):176-84.

coriolus, 72.5% showed normal cervical cytology, and 90% of patients with HPV high-risk who took coriolus reverted to HPV negative.<sup>10</sup>

### *Indole-3-carbinol*

A case study looked at the effects of indole-3-carbinol on high-grade lesions. Subjects were given 400mg of indole-3-carbinol per day. Of the 17 subjects who took the indole-3-carbinol, 8 showed complete regression after 12 weeks.<sup>11</sup>

## Genital herpes

When it comes to treating genital herpes, there are many things to consider besides antiviral therapies. Improving the health of the host and figuring out ways to reduce triggers, support mucosal immunity, and prevent recurrences with sexual partners is also important.

### *Topical lemon balm*

Lemon balm has been shown to significantly reduce the severity of outbreaks. In a case study, 66 patients were given 10% lemon balm versus a placebo four times a day for five days. Significant improvement was shown on day two of an outbreak, though over the course of five days, no difference was shown.<sup>12</sup>

### *Larrea tridentata*

Larrea leaf has been shown to inhibit HSV-2 replication. It can be administered orally, or used as a lotion. It has been shown to inhibit the activity of a gene promotor that is important for viral replication. Resin leaf capsules can be given daily in one to two doses and the lotion can also be used.

### *Propolis versus acyclovir for genital herpes*

A case study that involved 46 men and 44 women, ages 18-69 looked at recurrent, chronic, type 2 genital herpes. Subjects were broken into groups and given a 3% propolis ointment, a 5% acyclovir ointment, or a placebo four times per day for 10 days. Overall, at the end of the treatment, more participants in the propolis group were healed. The following chart details these findings.

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<sup>10</sup> Couto. S. Clinical Journal of Mycology. January 2012 Volume 3

<sup>11</sup> Gynecol Oncol 2000. 7(2) 123-129

<sup>12</sup> Koytchev et al

Day	Propolis	Acyclovir	Placebo
3 (crusts)	50%	27%	0%
7 (ulcers/healed)	55%	26%	30%
10 (ulcers/healed)	100%	80%	70%

## Conclusion

Common infections such as UTIs, vaginal infections, HPV, and herpes can impact a woman's health and mental well-being. Luckily, treating these issues with aggressive pharmaceuticals is not the only option. Often, botanicals can provide effective treatment with minimal to no side effects. From cranberry to green tea, the historical and clinical efficacies of these natural treatment options are undeniable. Ultimately, promoting an overall healthy lifestyle and safe sex practices can limit the occurrence of many of these common infections in women. These approaches, coupled with a botanical treatment plan, can help treat issues that develop and limit their impact on a woman's long-term health.

## Contributor

Dr. Tori Hudson graduated from the National College of Naturopathic Medicine (NCNM) in 1984 and has served the college in several capacities, including: medical director, associate academic dean, and academic dean. She is currently a clinical professor at NCNM, Southwest College of Naturopathic Medicine and Bastyr University, has been in practice for more than 28 years, is the medical director of her clinic, "A Woman's Time" in Portland, Oregon, and director of product research and education for Vitanica.

Dr. Hudson was awarded the 1990 President's award from the American Association of Naturopathic Physicians for her research in women's health, the 1999 prestigious Naturopathic Physician of the Year award, the 2003 NCNM Alumni Pioneer Award and the 2009 Natural Products Association Pioneer Award.

She is a nationally recognized author (book: *Women's Encyclopedia of Natural Medicine* second edition, McGraw Hill 2008), speaker, educator, researcher, and clinician. Dr. Hudson serves on several editorial boards, advisory panels and as a consultant to the natural products industry. Dr. Hudson is a member of the Scientific Advisory Board of *Gaia Herbs Professional Solutions*.