Urinary Tract Infection

Overview

What you need to know

Urgency? Frequency? Could be a UTI. Triggered by bacteria, UTI, or urinary tract infection, can occur in the kidneys, bladder, or urethra. According to research or other evidence, the following self-care steps may be helpful:

- Check out cranberry
  - To treat and to prevent recurrences, drink 4 to 10 ounces (114 to 296 ml) of cranberry juice a day or take 400 mg of powdered cranberry concentrate twice a day

- Try an enzyme preparation
  - To enhance antibiotic effectiveness, take 400 mg a day of proteolytic enzymes, such as bromelain and trypsin

- Avoid allergic foods
  - Work with a knowledgeable health practitioner to find out if you have allergies to foods that increase your susceptibility to urinary tract infections

- Aim for a strong immune system with a multivitamin
  - Take one a day to avoid vitamin and mineral deficiencies and to better resist infections

- If you have a UTI, see a healthcare provider
  - Existing infections may require treatment with antibiotics

These recommendations are not comprehensive and are not intended to replace the advice of your doctor or pharmacist. Continue reading the full urinary tract infection article for more in-depth, fully-referenced information on medicines, vitamins, herbs, and dietary and lifestyle changes that may be helpful.

About UTIs

Urinary tract infections (UTIs) are infections of the kidney, bladder, and urethra.

UTIs are generally triggered by bacteria and are more common when there is partial blockage of the urinary tract. In some people, UTIs tend to recur.

Check list

Product ratings for a urinary tract infection

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Symptoms

What are the symptoms?

Symptoms of a UTI usually begin suddenly and include frequent urination that is irritating or burning, a persistent urge to urinate even after the bladder has been emptied, and cramping or pressure in the lower abdomen. The urine often has a strong or unusual smell and may appear cloudy. In more serious infections, fever, chills, pain in the back below the ribs, nausea, vomiting, and diarrhea may also be present.

Diet

Dietary changes that may be helpful

When healthy volunteers consumed a large amount (100 grams) of refined sugar, the ability of their white blood cells to destroy bacteria was impaired for at least five hours.\(^1\) Consumption of excessive amounts of alcohol has also been shown to suppress immune function.\(^2\) Reduced intake
of dietary fat has been shown to stimulate immunity. For these reasons, many doctors recommend a reduced intake of sugar, alcohol, and fat during an acute infection and for prevention of recurrences.

People who have recurrent or chronic infections should discuss the possible role of allergies with a doctor, since chronic infections have been linked to allergies in many reports. Identifying and eliminating foods that trigger problems may help reduce the number of infections.

Supplements

Vitamins that may be helpful

The proteolytic enzymes, bromelain (from pineapple) and trypsin may enhance the effectiveness of antibiotics in people with a UTI. In a double-blind trial, people with UTIs received antibiotics plus either bromelain/trypsin in combination (400 mg per day for two days) or a placebo. One hundred percent of those who received the enzymes had a resolution of their infection, compared with only 46% of those given the placebo. This study used enteric-coated tablets. Enteric-coating prevents stomach acid from partially destroying the bromelain. Most commercially available bromelain products today are not enteric-coated, and it is not known if non-enteric coated preparations would be as effective.

Some bacteria that typically cause urinary tract infections can attach themselves to the lining of the urinary tract by binding to molecules of mannose that naturally occur there. Theoretically, if enough D-mannose is present in the urine, it would bind to the bacteria and prevent them from attaching to the urinary tract lining. One animal study has demonstrated this protective effect, but whether it would occur in humans is unknown, and no human research has investigated the effectiveness of oral D-mannose for the prevention or treatment of urinary tract infections.

Many doctors recommend 5,000 mg or more of vitamin C per day for an acute UTI, as well as long-term supplementation for people who are prone to recurrent UTIs. Although no controlled clinical trials have demonstrated the effectiveness of vitamin C for this purpose, vitamin C has been shown to inhibit the growth of E. coli, the most common bacterial cause of UTIs. In addition, supplementation with 4,000 mg or more of vitamin C per day, results in a slight increase in the acidity of the urine, creating an "unfriendly" environment for some infection-causing bacteria.

Vitamin A deficiency increases the risk of many infections. Although much of the promising research with vitamin A supplements and infections has focused on measles, vitamin A is also thought to be helpful in other infections. Some doctors recommend that people with urinary tract infections take vitamin A. A typical amount recommended to correct a deficiency is 10,000 to 25,000 IU per day.

Since the immune system requires many nutrients in order to function properly, many people take a multivitamin-mineral supplement for "insurance." In one double-blind trial, healthy elderly people who used such a supplement for one year showed improvements in immune function, as
well as a significant reduction in the total number of infections (including non-urinary-tract infections).\textsuperscript{15}

Are there any side effects or interactions?

Refer to the individual supplement for information about any side effects or interactions.

**Herbs**

**Herbs that may be helpful**

Modern research has suggested that cranberry may prevent urinary tract infections. In a double-blind trial, elderly women who drank 10 ounces (300 ml) of cranberry juice per day had a decrease in the amount of bacteria in their urine.\textsuperscript{16} In another study, elderly residents of a nursing home consumed either four ounces (120 ml) of cranberry juice or six capsules containing concentrated cranberry daily for 13 months. During that time, the number of UTIs decreased by 25%.\textsuperscript{17} A small preliminary trial found that supplementation with encapsulated cranberry concentrate (400 mg twice per day for three months) significantly reduced the recurrence of UTIs in women (aged 18-45) with a history of recurrent infections.\textsuperscript{18}

Research has suggested cranberry may be effective against UTIs because it prevents \textit{E. coli}, the bacteria that causes most urinary tract infections, from attaching to the walls of the bladder.\textsuperscript{19} Cranberry is not, however, a substitute for antibiotics in the treatment of acute UTIs. Moreover, in children whose UTIs are due to "neurogenic bladder" (a condition caused by spinal cord injury or myelomeningocele), cranberry juice supplementation did not reduce the rate of infection.\textsuperscript{20} Drinking 10-16 ounces (300-500 ml) of unsweetened or lightly sweetened cranberry juice is recommended by many doctors for prevention, and as part of the treatment of UTIs. Alternatively, 400 mg of concentrated cranberry extracts twice per day can be used.

\textbf{Blueberry} contains similar constituents as cranberry, and might also prevent bacteria from attaching to the lining of the urinary bladder.\textsuperscript{21} However, studies have not yet been done to determine if blueberry can help prevent bladder infections.

\textbf{Asparagus} (\textit{Asparagus officinalis}), birch (\textit{Betula spp.}), couch grass (\textit{Agropyron repens}), goldenrod (\textit{Solidago virgaurea}), \textbf{horsetail}, Java tea (\textit{Orthosiphon stamineus}), lovage (\textit{Levisticum officinale}), parsley (\textit{Petroselinum crispum}), spiny restharrow (\textit{Ononis spinosa}), and \textbf{nettle} are approved in Germany as part of the therapy of people with UTIs. These herbs appear to work by increasing urinary volume and supposedly helping to flush bacteria out of the urinary tract.\textsuperscript{22} \textbf{Juniper} is used in a similar fashion by many doctors. Generally, these plants are taken as tea.

\textbf{Buchu} leaf preparations have a history of use in traditional herbal medicine as a urinary tract disinfectant and diuretic.\textsuperscript{23} However, the German Commission E monograph on buchu concludes that insufficient evidence supports the modern use of buchu for the treatment of UTIs or inflammation.\textsuperscript{24}
The volatile oil of horseradish has been shown to kill bacteria that can cause urinary tract infections. The concentration that is required to kill these bacteria can be attained in human urine after oral ingestion of the oil. One early study found that horseradish extract may help people with urinary tract infections. Further studies are necessary to confirm the safety and effectiveness of horseradish in treating urinary tract infections.

Goldenseal is reputed to help treat many types of infections. It contains berberine, an alkaloid that may prevent UTIs by inhibiting bacteria from adhering to the wall of the urinary bladder. Goldenseal and other plants containing berberine (such as Oregon grape) may help in the treatment of UTIs. These herbs have not, however, been studied for the treatment of UTIs in humans.

Because of the anti-inflammatory effects of plantain, it may be beneficial in some people with UTIs. However, human trials have not been done to confirm this possibility or to confirm the traditional belief that plantain is diuretic.

An extract of uva ursi is used in Europe and in traditional herbal medicine in North America, as a treatment for UTI. This herb is approved in Germany for treatment of bladder infections. The active constituent in uva ursi is arbutin. In the alkaline environment of the urine, arbutin is converted into another chemical, called hydroquinone, which kills bacteria. A generally useful amount of uva ursi tincture is 3-5 ml three times per day. Otherwise, 100-250 mg of arbutin in herbal extract capsules or tablets three times per day can be used. Uva ursi should only be used to treat a UTI under the close supervision of a physician.

Are there any side effects or interactions?

Refer to the individual herb for information about any side effects or interactions.

Other Alternatives

Holistic approaches that may be helpful

Acupuncture might be of some benefit for women with recurrent UTIs. A controlled study compared acupuncture to sham ("fake") acupuncture or no treatment in a group of women with recurrent UTIs. After six months, the women receiving real acupuncture had half as many UTI episodes as the sham group and only one-third as many as the untreated group, a significant difference.

References


