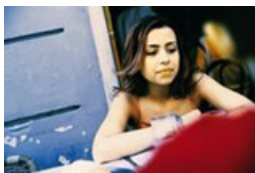


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Urinary tract infections: Do antibiotics help?



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Uncomplicated urinary tract infections (UTIs) like cystitis are most common among young women: on average, they will get this kind of infection every one or two years. UTIs are caused by bacterial infections. They are usually associated with burning pain when passing urine, and often make people need to go to the toilet much more often too. These symptoms can be very unpleasant, but the infection will rarely lead to any serious health problems. More serious complications might arise if, for instance, bacteria reach the kidneys and lead to a kidney infection (pyelonephritis). Then people have other symptoms too, such as kidney pain, fever, chills, nausea and vomiting. UTIs can also be a more serious problem if they keep coming back, which happens in some women.

Different women deal with UTIs in very different ways. Some wait a few days to see whether the symptoms go away on their own, or follow common tips such as drinking a lot, or emptying their bladder straight after having sex. Many women decide to take antibiotics to try to get rid of the unpleasant symptoms.

Antibiotics help in the treatment of UTIs

Antibiotics can quickly relieve the symptoms of UTIs and clear up the infection by killing the bacteria. This was proven in trials where one group of people took antibiotics and another group used a placebo (dummy drug). You can read why it is important to do research in this way to get reliable results here (URL: <http://www.informedhealthonline.org/index.61.en.html>) . The trials showed that people who took antibiotics felt better a lot sooner. The pain and burning went away fast – usually within 1 to 3 days. At the end of the treatment, which lasted between 1 and 7 days, 62 out of 100 women no longer had any symptoms (62%). In comparison, only 26 out of 100 women (26%) who took a placebo were free of symptoms at the end of treatment.

Some women had adverse effects while taking antibiotics. These included gastrointestinal (stomach and bowel) problems such as nausea and diarrhea, as well as headaches, rashes and itching. The trials did not provide any data about whether taking antibiotics helps against

UTIs in the long term.

Different antibiotics lead to similar symptom relief

A group of researchers from the Cochrane Collaboration – an international network of researchers – wanted to find out how well the different antibiotics work compared to each other when used to treat UTIs. They summarized the results of all the good-quality trials in a systematic review. You can read more about this kind of research here (URL: <http://www.informedhealthonline.org/index.61.en.html>) .

The researchers found that all of the drugs they looked at had a similar benefit. This is true for conventional antibiotics as well as quinolones. Quinolones are a type of antibiotic but they work in a different way: they block the action of a particular enzyme which the bacteria need to live. The most suitable medication in an individual case will depend on various factors. For example:

- Are there any reasons why someone cannot use a particular antibiotic, for instance because they are allergic to it, cannot tolerate it, or are pregnant?
- Are some antibiotics more likely to have certain adverse effects than others?
- How sensitive are the bacteria to the different antibiotics?
- Are there known cases of resistant bacteria?

Resistant bacteria are bacteria that do not react to particular antibiotics. Bacteria can become resistant if, for instance, antibiotics are used too much. You can read more about this problem and how to use antibiotics safely here (URL: <http://www.informedhealthonline.org/index.472.en.html>) .

Taking antibiotics for three or five days

Symptoms can even be relieved by a single high-dose antibiotic, as was used up to a few years ago. That one-off therapy got rid of the symptoms quickly, but there were often enough bacteria left over for the infection to return. So today UTIs are treated using either a three-day short course or a longer course of antibiotics (five days or more).

To answer the question whether it is best to take the

shorter or longer course of antibiotics, researchers from the Cochrane Collaboration analyzed the results of 32 trials that included more than 9,600 women. After their analysis, the researchers came to several conclusions that could help decide how long to take antibiotics.

The first conclusion: three days of treatment is usually enough to relieve symptoms in women with uncomplicated UTIs. Taking antibiotics for longer does not improve symptom relief, but it does lead to more adverse effects, such as stomach and bowel problems or skin rashes.

Another difference was found when the urine of the women was tested. When someone has a UTI, bacteria can be detected in their urine. After three-day antibiotic treatment, bacteria could still be found in some women's urine. After five days, though, the urine was bacteria-free in almost all the women.

Whether these leftover bacteria cause any health problems is not really known. The trials did not allow any clear conclusions about whether an infection is more likely to come back if only a short course of antibiotics is taken. The length of therapy depends on what is considered to be more important: preventing the UTI coming back or avoiding adverse effects. Women who want to be as sure as possible that the infection is completely gone might choose to take the drugs for five or more days. For women who would rather only take antibiotics for a short amount of time because they want to avoid adverse effects, a three-day course would be an option.

We are currently working on further information about the prevention and treatment of urinary tract infections. As soon as it is published on our website, we will include a link to it here. If you would like to be informed when we publish new information, you can subscribe to our newsletter (URL: <http://www.gesundheitsinformation.de/newsletter.69.en.html>)

Author: German Institute for Quality and Efficiency in Health Care (IQWiG)

Glossary

antibiotics

Antibiotics are medicines that can be used for bacterial and some fungal infections. Antibiotics do not work against viruses. Well-known antibiotics include penicillin, tetracycline and chloramphenicol.

bacteria

Bacteria are micro-organisms that, unlike viruses, can exist on their own. Viruses, on the other hand, can only exist inside a living cell. Most bacteria are not harmful to people, and some are actually beneficial. Bowel bacteria support bowel health. However if they get into the urinary system, they can cause an infection there. Doctors prescribe antibiotics for illnesses where bacteria need to be stopped or killed off. Immunisation is also possible against some bacterial infections, such as diphtheria, tetanus or whooping cough.

Cochrane Collaboration

The Cochrane Collaboration is an international network of thousands of researchers and others. They work together in teams called Cochrane Review Groups to answer questions about health care by doing systematic reviews of evidence. To achieve this, the members of the Collaboration have developed systems and methods for systematically finding and analysing the results of trials of health care interventions. The goal of the Cochrane Collaboration is to help patients, health care practitioners and others make more informed decisions about health care. You can read more about the Cochrane Collaboration at their website.

systematic review

Systematic reviews pull together the evidence on a specific question. A systematic review sets out to find all the trials that have put that particular question to the test. The quality of the trials are then evaluated and then results analyzed and explained. Often, the results of trials can then be summarized together through a statistical method called meta-analysis.

bladder

The urinary bladder is the organ that collects urine before it is released from the body through the urethra. The urine passes from the kidneys to the bladder by travelling through

tubes called ureters. An adult bladder can hold between 0.5 and 1 liter of urine (about 17 to 34 ounces), but the urge "to go" is usually already felt when there are smaller amounts of urine. The bladder can change in size depending on how much urine it is holding thanks to the muscles surrounding it. The urine is held back by sphincter muscles. When we urinate, the muscles of the bladder contract and the sphincter muscles relax, causing the bladder to open.

infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

Sources

IQWiG health information is based on research in the international literature. We identify the most scientifically reliable knowledge currently available, particularly so-called “systematic reviews”. These summarise and analyse the results of scientific research on the benefits and harms of treatments and other health care interventions. You can read more about systematic reviews and why these can provide the most trustworthy evidence about the state of knowledge here (URL: <http://www.gesundheitsinformation.de/evidence-based-medicine.61.en.html>) . The authors of the major systematic reviews on which our information is based are always approached to help us ensure the medical and scientific accuracy of our products.

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The German Institute for Quality and Efficiency in Health Care (IQWiG)

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at [**www.informedhealthonline.org**](http://www.informedhealthonline.org)

Disclaimer

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