



## Complete Summary

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### GUIDELINE TITLE

Epididymitis and orchitis. In: Guidelines on the management of urinary and male genital tract infections.

### BIBLIOGRAPHIC SOURCE(S)

Epididymitis and orchitis. In: Grabe M, Bishop MC, Bjerklund-Johansen TE, Botto H, Çek M, Lobel B, Naber KG, Palou J, Tenke P. Guidelines on the management of urinary and male genital tract infections. Arnhem, The Netherlands: European Association of Urology (EAU); 2008 Mar. p. 88-90. [9 references]

### GUIDELINE STATUS

This is the current release of the guideline.

## \*\* REGULATORY ALERT \*\*

### FDA WARNING/REGULATORY ALERT

**Note from the National Guideline Clearinghouse:** This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- [July 08, 2008 – Fluoroquinolones \(ciprofloxacin, norfloxacin, ofloxacin, levofloxacin, moxifloxacin, gemifloxacin\)](#): A BOXED WARNING and Medication Guide are to be added to the prescribing information to strengthen existing warnings about the increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolones for systemic use.

## COMPLETE SUMMARY CONTENT

\*\* REGULATORY ALERT \*\*

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

QUALIFYING STATEMENTS

IMPLEMENTATION OF THE GUIDELINE

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

DISCLAIMER

## SCOPE

### DISEASE/CONDITION(S)

- Epididymitis
- Orchitis

**Note:** Epididymitis, inflammation of the epididymis, causes pain and swelling which is almost always unilateral and relatively acute in onset. In some cases, the testis is involved in the inflammatory process (epididymo-orchitis). On the other hand, inflammatory processes of the testicle, especially virally induced orchitis, often involve the epididymis.

### GUIDELINE CATEGORY

Diagnosis  
Management  
Prevention  
Screening  
Treatment

### CLINICAL SPECIALTY

Urology

### INTENDED USERS

Physician Assistants  
Physicians

### GUIDELINE OBJECTIVE(S)

- To assist urologists and physicians from other medical specialties in their daily practice
- To provide guidelines on the diagnosis and treatment of epididymitis and orchitis

### TARGET POPULATION

Men with epididymitis and/or orchitis

### INTERVENTIONS AND PRACTICES CONSIDERED

#### Diagnosis

1. Physical examination
2. Urinalysis
3. Stained urethral smear or mid-stream urine sample for microbiology
4. Ejaculate analysis
5. Differential diagnosis for spermatic cord torsion

#### Treatment

1. Antimicrobial treatment (fluoroquinolones, doxycycline)
2. Duration of treatment
3. Supportive therapy (bed rest, uppositioning of the testes, antiphlogistic therapy with methylprednisolone)
4. Treatment of sexual partner
5. Treatment of micturition disturbances to prevent relapse
6. Surgical treatment, if indicated

## **MAJOR OUTCOMES CONSIDERED**

- Morbidity
- Relapse rate
- Cure rate

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Hand-searches of Published Literature (Primary Sources)  
Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

#### **General Search Strategy**

Up until 2007, the main strategy was to rely on the guidelines group members' knowledge and expertise on the current literature assuming that all, or almost all, relevant information would be captured.

In updates produced from 2008 onwards, a structured literature search will be performed for all guidelines but this search will be limited to randomized controlled trials and meta-analyses, covering at least the past three years, or up until the date of the latest text update if this exceeds the three-year period. Other excellent sources to include are other high-level evidence, Cochrane review and available high-quality guidelines produced by other expert groups or organizations. If there are no high-level data available, the only option is to include lower-level data. The choice of literature will be guided by the expertise and knowledge of the Guidelines Working Group.

#### **Specific Strategy for This Guideline**

For literature review, PubMed was searched for published meta-analyses, which were used as far as available. Otherwise there was a non-structured literature review process by the group members. Each member was responsible for one chapter (reporter).

### **NUMBER OF SOURCE DOCUMENTS**

Not stated

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Given)

### **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

#### **Levels of Evidence**

**Ia** Evidence obtained from meta-analysis of randomized trials

**Ib** Evidence obtained from at least one randomized trial

**IIa** Evidence obtained from at least one well-designed controlled study without randomization

**IIb** Evidence obtained from at least one other type of well-designed quasi-experimental study

**III** Evidence obtained from well-designed non-experimental studies, such as comparative studies, correlation studies and case reports

**IV** Evidence obtained from expert committee reports or opinions or clinical experience of respected authorities

### **METHODS USED TO ANALYZE THE EVIDENCE**

Review of Published Meta-Analyses  
Systematic Review

### **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

### **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus (Consensus Development Conference)

### **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

#### **General Methods Used to Formulate the Recommendations**

- The first step in the European Association of Urology (EAU) guidelines procedure is to define the main topic.
- The second step is to establish a working group. The working groups comprise about 4-8 members, from several countries. Most of the working group members are academic urologists with a special interest in the topic. Specialists from other medical fields (radiotherapy, oncology, gynaecology, anaesthesiology etc.) are included as full members of the working groups as

needed. In general, general practitioners or patient representatives are not part of the working groups. Each member is appointed for a four-year period, renewable once. A chairman leads each group.

- The third step is to collect and evaluate the underlying evidence from the published literature.
- The fourth step is to structure and present the information. All main recommendations are summarized in boxes and the strength of the recommendation is clearly marked in three grades (A-C), depending on the evidence source upon which the recommendation is based. Every possible effort is made to make the linkage between the level of evidence and grade of recommendation as transparent as possible.

### **Specific Methods Used for This Guideline**

The members of the Urinary Tract Infection (UTI) Working Group of the European Association of Urologists (EAU) Health Care Office established the first version of these guidelines in several consensus conferences. The members of the current UTI Working Group of the EAU Guidelines Office updated the guidelines in several consensus conferences thereafter. The first draft of each chapter was sent to the committee members asking for comments, which were then considered, discussed and incorporated accordingly.

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

### **Grades of Recommendation**

- A. Based on clinical studies of good quality and consistency addressing the specific recommendations and including at least one randomized trial
- B. Based on well-conducted clinical studies, but without randomized clinical studies
- C. Made despite the absence of directly applicable clinical studies of good quality

## **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

## **METHOD OF GUIDELINE VALIDATION**

Internal Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

The formal agreement to each updated chapter was achieved by the European Association of Urology (EAU) working group at three plenary meetings: the first in Paris on 10 December 2004, the next in Istanbul on 15 March 2005, and finally in Florence on 22 October 2005. Each chapter was reviewed by three committee members (editorial group) for consistency and compatibility in two editorial meetings: one meeting took place in Straubing, 22-24 April 2005, and one in Stavern, 9-11 Sept 2005, and the chapters were revised accordingly.

There is no formal external review prior to publication.

The Appraisal of Guidelines for Research and Evaluation (AGREE) instrument was used to analyse and assess a range of specific attributes contributing to the validity of a specific clinical guideline.

The AGREE instrument, to be used by two to four appraisers, was developed by the AGREE collaboration ([www.agreecollaboration.org](http://www.agreecollaboration.org)) using referenced sources for the evaluation of specific guidelines. (See the "Availability of Companion Documents" field for further methodology information).

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Levels of evidence (**Ia-IV**) and grades of recommendation (**A-C**) are defined at the end of the "Major Recommendations" field.

#### Diagnosis

It is imperative for the physician to differentiate between epididymitis and spermatic cord torsion as soon as possible using all available information, including the age of the patient, history of urethritis, clinical evaluation and Doppler (duplex) scanning of testicular blood flow.

#### Treatment

Only a few studies have been performed measuring the penetration of antimicrobial agents into epididymis and testis in humans. Of these, the fluoroquinolones have shown favourable properties (Ludwig et al., 1997) (**IIa**).

Antimicrobials should be selected on the empirical basis that in young, sexually active men *Chlamydia trachomatis* is usually causative, and that in older men with benign prostatic hyperplasia (BPH) or other micturition disturbances, the most common uropathogens are involved. Studies comparing microbiological results from puncture of the epididymis and from urethral swabs as well as urine have shown very good correlation. Therefore, prior to antimicrobial therapy, a urethral swab and midstream specimen of urine (MSU) should be obtained for microbiological investigation (**C**).

Again, fluoroquinolones, preferably those with activity against *C. trachomatis* (e.g., ofloxacin and levofloxacin), should be the drugs of first choice, because of their broad antibacterial spectra and their favourable penetration into the tissues of the urogenital tract. If *C. trachomatis* has been detected as an aetiological agent, treatment could also be continued with doxycycline, 200 mg/day, for a total treatment period of at least 2 weeks. Macrolides may be used as alternative agents (**C**).

Supportive therapy includes bed rest, uppositioning of the testes and antiphlogistic therapy. Since, for young men, epididymitis can lead to permanent occlusion of the epididymal ducts and thus to infertility, one should consider

antiphlogistic therapy with methylprednisolone, 40 mg/day, and reduce the dose by half every second day (C).

In case of *C. trachomatis* epididymitis, the sexual partner should also be treated (C). If uropathogens are found as causative agents, a thorough search for micturition disturbances should be carried out to prevent relapse (C). Abscess-forming epididymitis or orchitis also needs surgical treatment. Chronic epididymitis can sometimes be the first clinical manifestation of urogenital tuberculosis.

### **Definitions:**

### **Levels of Evidence**

**Ia** Evidence obtained from meta-analysis of randomized trials

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- C. Made despite the absence of directly applicable clinical studies of good quality

### **CLINICAL ALGORITHM(S)**

None provided

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **REFERENCES SUPPORTING THE RECOMMENDATIONS**

[References open in a new window](#)

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The type of supporting evidence is identified and graded for most of the recommendations (see "Major Recommendations" field).

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

Appropriate diagnosis and treatment of epididymitis and orchitis

### **POTENTIAL HARMS**

Not stated

## **QUALIFYING STATEMENTS**

### **QUALIFYING STATEMENTS**

- The purpose of these texts is not to be proscriptive in the way a clinician should treat a patient but rather to provide access to the best contemporaneous consensus view on the most appropriate management currently available. European Association for Urology (EAU) guidelines are not meant to be legal documents but are produced with the ultimate aim to help urologists with their day-to-day practice.
- The EAU believe that producing validated best practice in the field of urology is a very powerful and efficient tool in improving patient care. It is, however, the expertise of the clinician which should determine the needs of their patients. Individual patients may require individualized approaches which take into account all circumstances and treatment decisions often have to be made on a case-by-case basis.

## **IMPLEMENTATION OF THE GUIDELINE**

### **DESCRIPTION OF IMPLEMENTATION STRATEGY**

The European Association of Urology (EAU) Guidelines long version (containing all 19 guidelines) is reprinted annually in one book. Each text is dated. This means that if the latest edition of the book is read, one will know that this is the most updated version available. The same text is also made available on a CD (with hyperlinks to PubMed for most references) and posted on the EAU websites Uroweb and Urosource ([www.uroweb.org/professional-resources/guidelines/](http://www.uroweb.org/professional-resources/guidelines/) & <http://www.urosources.com/diseases/>).

Condensed pocket versions, containing mainly flow-charts and summaries, are also printed annually. All these publications are distributed free of charge to all (more than 10,000) members of the Association. Abridged versions of the guidelines are published in European Urology as original papers. Furthermore, many important websites list links to the relevant EAU guidelines sections on the association websites and all, or individual, guidelines have been translated to some 15 languages.

## **IMPLEMENTATION TOOLS**

Pocket Guide/Reference Cards

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## **INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES**

### **IOM CARE NEED**

Getting Better

### **IOM DOMAIN**

Effectiveness

## **IDENTIFYING INFORMATION AND AVAILABILITY**

### **BIBLIOGRAPHIC SOURCE(S)**

Epididymitis and orchitis. In: Grabe M, Bishop MC, Bjerklund-Johansen TE, Botto H, Çek M, Lobel B, Naber KG, Palou J, Tenke P. Guidelines on the management of urinary and male genital tract infections. Arnhem, The Netherlands: European Association of Urology (EAU); 2008 Mar. p. 88-90. [9 references]

### **ADAPTATION**

Not applicable: The guideline was not adapted from another source.

### **DATE RELEASED**

2008 Mar

### **GUIDELINE DEVELOPER(S)**

European Association of Urology - Medical Specialty Society

### **SOURCE(S) OF FUNDING**

European Association of Urology

### **GUIDELINE COMMITTEE**

Management of Urinary and Male Genital Tract Infections Guidelines Writing Panel

### **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

*Panel Members:* M. Grabe (*Chairman*); M.C. Bishop; T.E. Bjerklund-Johansen; H. Botto; M. Çek; B. Lobel; K.G. Naber; J. Palou; P. Tenke

## **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

All members of the Management of Urinary and Male Genital Tract Infections guidelines writing panel have provided disclosure statements of all relationships which they have and which may be perceived as a potential source of conflict of interest. This information is kept on file in the European Association of Urology Central Office database. This guidelines document was developed with the financial support of the European Association of Urology (EAU). No external sources of funding and support have been involved. The EAU is a non-profit organisation and funding is limited to administrative assistance, travel, and meeting expenses. No honoraria or other reimbursements have been provided.

## **GUIDELINE STATUS**

This is the current release of the guideline.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available in Portable Document Format (PDF) from the [European Association of Urology Web site](#).

Print copies: Available from the European Association of Urology, PO Box 30016, NL-6803, AA ARNHEM, The Netherlands.

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following are available:

- EAU guidelines office template. Arnhem, The Netherlands: European Association of Urology (EAU); 2007. 4 p.
- The European Association of Urology (EAU) guidelines methodology: a critical evaluation. Arnhem, The Netherlands: European Association of Urology (EAU); 18 p.

The following is also available:

- Management of urinary and male genital tract infections. 2008, Ultra short pocket guidelines. Arnhem, The Netherlands: European Association of Urology (EAU); 2008 Mar. 17 p.

Print copies: Available from the European Association of Urology, PO Box 30016, NL-6803, AA ARNHEM, The Netherlands.

## **PATIENT RESOURCES**

None available

## **NGC STATUS**

This NGC summary was completed by ECRI Institute on September 9, 2008. The information was verified by the guideline developer on December 8, 2008.

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