STI-Treatment Pocket Guide

Treatment recommendations for selected sexually-transmitted infections (STI)
of the German STI-Society for the Promotion of Sexual Health

English edition
2014/2015

Kindly supported by GILEAD

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Dear colleagues,

The first edition of this STI-Treatment Pocket Guide on the diagnostics and treatment of sexually-transmitted infections (STI) has already been a great success. The printed copies were quickly out of stock: it appears that there is a need for a concise overview of the current therapies for STI. Due to the updated therapy recommendations – especially for the treatment of Hepatitis C – this new, fully-revised and amended second edition has been developed taking account current scientific literature, suggestions received, proposals, and comments.

The advice on STI counselling, developed by members of the Section for Sexual Health at the DSTIG, has been incorporated. This amendment reflects the commitments of the German STI Society beyond medical diagnostics and therapy. The treatment of STI and the promotion of sexual health can only bear success by an integrated approach taking into consideration the individual requirements of those seeking advice.

This STI-Treatment Pocket Guide is intended as an easily accessible reference and thus not substitute for the study of relevant scientific literature, relevant prescribing informations and guidelines. It has been our attempt to be as updated as possible with our recommendations for therapy. The next revision of this reference guide is scheduled for June 2015 and comments and advice are highly appreciated.

My special thanks go to the authors, who have invested much time and effort into this pocket guide, and to all who have contributed with their proposals and comments. I am sure it has been worth it!

Prof. Dr. Norbert H. Brockmeyer, President of the German STI-Society (DSTIG)
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**EXPLANATION OF ABBREVIATIONS**

YO = Years Old  
qd = once daily  
bid = twice daily  
tid = three times daily  
qid = four times daily
These recommendations comprise recommendations for medical treatment in typical situations. They are not binding and neither constitute nor limit liability.

DSTIG cannot accept any liability for information on therapy instructions and schemata, nor on any advise on the posolgy of pharmaceutical products.

In some instances the recommendations may suggest off-label use of certain drugs.

The recommendations included here are based entirely on medical and scientific evidence. They do not reflect any commercial interests.

This guide summarizes the essential recommendations on the therapy of gonorrhea, syphilis and chlamydia infections. In addition, it takes into account the latest guidelines provided by AWMF, CDC, BASHH, the Austrian STD-Society, as well as relevant scientific literature (as of May 2014).

The recommendations reflected in this guide are not exhaustive. For more detailed information (especially concerning HIV and HPV), please consult the respective guidelines.

Generally the guide recommends the standard treatment regime. In instances of drug intolerance, contra indication etc. other therapies should be applied.

Partner therapy is crucial for a successful treatment of many STI. It should be recommended individually. Particularly, the information and treatment of the sexual partner(s) of patients infected with gonococci and chlamydia is obligatory.

The STI-Treatment Pocket Guide will be updated and revised continually. See the DSTIG homepage (http://dstig.de/literaturleitlinienlinks/sti-leitfaden.html) for the latest version.
STI-COUNSELLING

The DSTIG Section “Sexual Health” has developed recommendations for counselling, diagnostics and therapy of STI which can be accessed at: http://dstig.de/literaturleitlinienlinks/aktuelle-publikationen.html

Counselling: a key element of a successful management of STI
Counselling on STI – including HIV – plays an important role both as a prophylactic measure (prevention and prophylaxis) and when it comes to treat STI (counselling, diagnostics, therapy).

Successful STI counselling requires practitioners to be competent, respectful, authentic and empathetic.
The voluntary nature of the consultation as well as the patient’s self-responsibility are essential. If they wish so, patients should be able to retain anonymity throughout the counselling process as well as the medical examination and treatment. Generally, the consultation should be as specific as possible to the individual’s concerns. Priority must be given to the individual’s needs even if patients refuse to provide specific details and if this appears to conflict with epidemiological or public health concerns. STI-counselling comprises advice on vaccinations, particularly concerning hepatitis A and B, and HPV.

Promoting sexual health
Healthcare providers should always be aware of their limits – both personally and institutionally. Professional networks are of particular importance for STI-management as they enable medical staff to answer manifold individual needs by referring patients to suitable specialized institutions. This is the only way to block the routes of transmission effectively and thereby promote sexual health efficiently.
PHYSICAL EXAMINATION

The physical examination should be extended to those parts of the body where an STI can be expected to manifest itself. In case of vaginal intercourse this is primarily the genitourinary tract, for receptive anal intercourse the anal region and for receptive oral intercourse the mouth and throat area; secondary examination of other regions should be undertaken, if applicable. The extent of the clinical examination is determined by the patient’s sex, sexual practices, reported symptoms and the actual risk.

Physical examination of women: • inspection of the vulva, the perineum and the perianal area, palpation of the groin • speculum examination of the vagina and ectocervix, coloscopy • bimanual palpation of the pelvis • perianal inspection, if necessary rectal examination and inspection of further areas (mouth, throat) as well as the skin.

Physical examination of heterosexual men: • inspection of the penis (retraction of the foreskin) and the scrotum • palpation of the groin and the scrotum • perianal inspection, rectal examination if necessary • inspection of further areas (mouth, throat) as well as the skin, if necessary.

Physical examination of men who have sex with men (MSM): • inspection of the penis (retraction of the foreskin) and the scrotum • palpation of the groin and the scrotum • perianal inspection, rectal examination • inspection of the basis of the penis • inspection of the skin • inspection of the mouth and throat.

In transsexuals physical examination depends on the individual’s anatomy (like in MSM or in women), e.g. speculum inspection of neovagina.

Frequency of examination: The indication of clinical and serological examinations is determined according to risk factors and symptoms present:

• Women and men with heterosexual intercourse and more than 10 sexual contacts with increased risk a year: once a year.
• MSM after sexual contacts with increased risk (insertive/receptive): STI screening every 3-6 months. More than 10 high risk contacts: HIV-test once a year.
• Sex workers who have unprotected intercourse: STI screening every 3-6 months, HIV-test once a year.
Examination of patients who have multiple heterosexual contacts with different partners (10 or more a year) or who have heterosexual contacts with partners from high prevalence areas (once a year):

**Men:** HIV serology, syphilis serology, screening for chlamydia and gonorrhea; in case of symptoms, further pathogen-specific diagnostics.

**Women:** HIV serology, syphilis serology, gynaecological examination, screening for chlamydia and gonorrhea; in case of symptoms, further pathogen-specific diagnostics.

**Sexually active MSM without STI symptoms (according to risk every 3-12 months):** HIV, hepatitis A, B, C and syphilis serology, screening for chlamydia and gonorrhea, collection of information on vaccination status of hepatitis A and B; further pathogen-specific diagnostics according to symptoms and clinical findings.

**Examination of women who have sexual contacts with MSM (every 6-12 months):** HIV serology, syphilis serology, screening for chlamydia and gonorrhea, gynaecological examination, further pathogen-specific diagnostics according to symptoms and clinical findings.

In instances of heterosexual contacts with partners consuming drugs (intranasal, injections), a Hep C serology should be recommended to the patient. For detailed information on the management of victims (male and female) of sexual assault please refer to the recommendations provided by local institutions.
### Diseases

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<th>Alternatives</th>
<th>Diagnostics</th>
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<td><strong>Syphilis</strong></td>
<td><strong>Treponema pallidum</strong></td>
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<tr>
<td><strong>Adults</strong></td>
<td><strong>early syphilis</strong> (&lt;1 year)</td>
<td>• Benzathine penicillin G 2.4 million units IM in a single dose, left/right gluteal 1.2 million units each</td>
<td>• Ceftriaxone* 2 g IV qd 10d (only in case of penicillin allergy)</td>
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<td></td>
<td>• Doxycycline 100 mg PO bid 14d (only in case of penicillin allergy; not in pregnancy)</td>
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<td></td>
<td><strong>late syphilis</strong> (&gt;1 year) or unknown duration</td>
<td>• Benzathine penicillin G 2.4 million units IM once per week for 3 weeks (i.e. on day 1, 8 and 15), left/right gluteal 1.2 million units each</td>
<td>• Ceftriaxone* 2 g IV qd 10-14d</td>
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<td></td>
<td></td>
<td>• Doxycycline 100 mg PO bid 28d (only in case of penicillin allergy; not in pregnancy)</td>
<td>• Activity: Lipoid-Ab, antitreponemal-IgM</td>
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<td></td>
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<td>• Erythromycin 500 mg PO qid 28d</td>
<td>• NAAT (early infection: swab from sore, biopsy)</td>
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<td><strong>Children</strong></td>
<td>• Benzathine penicillin G IM in single doses of 50,000 U/kg, not to exceed 2.4 million U. Early syphilis: one single dose (day 1); otherwise: repeat application on days 8 and 15 (3 single doses).</td>
<td>• Ceftriaxone may be used only very cautiously (cross-allergy* in up to 12%). Doxycycline is contraindicated!</td>
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<td>In case of allergy: erythromycin or doxycycline (not for children &lt;8 YO).</td>
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<td></td>
<td><strong>HIV coinfection</strong></td>
<td>Therapy according to stage of syphilis as without HIV. Increased risk of neurosyphilis if CD4 &lt;300/µl. Treat as neurosyphilis if this is suspected clinically!</td>
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<td></td>
<td><strong>Pregnancy</strong></td>
<td>Therapy according to stage of syphilis, see without pregnancy. In case of allergy: desensitization. Ceftriaxone may be used only very cautiously (cross-allergy* in up to 12%). Doxycycline is contraindicated!</td>
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<tr>
<td><strong>Syphilis connata</strong></td>
<td><strong>Newborns</strong></td>
<td>• Penicillin G IV 200,000-250,000 U/kg/day in divided doses: 1st week of life = 2 applications; 2.-4. week of life = 3 applications; after 5th week of life = 4 applications. Doxycycline is contraindicated!</td>
<td>As above and in addition for children:</td>
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<td>• 2 independent IgM tests e.g. 19S FTA-ABS-IgM and Immunoblot-IgM, comparison of lipoid-AB-concentrations in mother and child (VDRL/ RPR)</td>
</tr>
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</table>

*Cave cross-allergies with β-lactame-type antibiotics!

**Exclude additional STI!**
<table>
<thead>
<tr>
<th>Diseases</th>
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</thead>
</table>
| **Neurosyphilis**  
incl. ocular syphilis or syphilis of the ear | Adults | • Aqueous Penicillin G IV:  
5 million U q 4 hrs ≥14d  
6 million U q 6 hrs ≥14d  
10 million U q 8 hrs ≥14d  | • If applicable: Ceftriaxone*  
2 g IV qd ≥14d  
(first dose: 4 g)  
• If applicable: Ceftriaxone  
2 g PO bid 28d  
only in case of Penicillin allergy; not in pregnancy; not for children <8 YO | • Neuro-psychiatric investigation, syphilis serology incl. activity measurement of serum, CSF diagnostics (incl. leucocyte counts, concentration of proteins, lactate, and albumin, IgG-/IgM-ratio), lipoid-AB, and TP-AB-index  
Test of cure: CSF-investigation after 6 months |
|                          | Children | • Penicillin G aqueous IV:  
0.025 million U/kg q 4 hrs ≥14d | | |

Concomitant use of glucocorticoids (e.g. Prednisolone PO/IV 1.5 mg/kg) may be helpful to suppress Herxheimer reaction as well as mild allergies (not in case of type 1-allergy!). If allergy to Penicillin is confirmed, rapid desensitization is preferred.

*Cave Herxheimer-reaction: prophylaxis with Prednisolone PO/IV 1 mg/kg 1 hour before first application

* Cave cross-allergies with β-lactame-type Antibiotics!
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<td><strong>Gonorrhea</strong> <em>Neisseria gonorrhoeae</em></td>
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<tr>
<td>Adults</td>
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<td>• Ceftriaxone* IV/IM 1 g as single dose together with Azithromycin1 PO 1.5 g as single dose</td>
<td>Urogenital/rectal: If IV/IM not applicable: • Cefixime 800 mg PO as single dose plus • Azithromycin1 1.5 g PO as single dose</td>
<td>• NAAT (specimen: swab urethral, cervical, vulvo-vaginal, anal, conjunctival, pharyngeal, in men also first voided urine) <em>If pharyngeal NAAT pos. confirm via independent 2nd Test (NAAT with different target or culture)</em> • Culture (selective agar (e.g. Thayer-Martin), 5-10% CO2, 35-37°C, rel. humidity 70-80%), as appropriate biochemical, molecular, or spectroscopic identification, analysis of antibiotic sensitivity (specimen: swab as for NAAT, see above) • Microscopy (specimen: platinum loop) only in men with overt purulent urethritis *Perform test of cure: clinical/culture 3-7 days post treatment; NAAT 2 weeks post treatment. Before therapy start collect adequate specimens for gonococcal diagnostic procedures (NAAT and culture, if possible)! <em>During menstruation, intracervical swabs for culture are more reliable.</em></td>
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<td>Adults</td>
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<td>• Azithromycin not licensed for use in pregnant women!</td>
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<td>Prior to therapy</td>
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<td>Establish microbiological culture!</td>
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<td><strong>Recommended partner therapy!</strong></td>
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<td><strong>Children</strong></td>
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<tr>
<td>Adults</td>
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<tr>
<td>Newborns (prophylaxis)</td>
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<td>• Ceftriaxone* 50 mg/kg (not to exceed 125 mg) IV/IM as single dose</td>
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<td>Children</td>
<td></td>
<td>• Ceftriaxone* 0.5-1.0 g IV/IM as single dose</td>
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<tr>
<td>Newborns</td>
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<td><strong>Gonoblenorrhoe</strong></td>
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<td>Adults</td>
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<td>• Emergency! Start calculated therapy immediately. Choices for calculated therapy as above; in addition lavage with plentiful 0.9%-NaCl in aqueous solution! • 1% Silver nitrate (AgNO3) (Credé’s prophylaxis) or antibiotic eye drops (Erythromycin) or povidone-iodine solution.</td>
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<td>Newborns</td>
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<td><strong>Disseminated Gonococcal Infection (DIG) (Sepsis)</strong></td>
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<td>Adults</td>
<td></td>
<td>• Ceftriaxone* 1.0 g IV qd, ≥7d</td>
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<td><em>For IM-application dissolve 1.0 g Ceftriaxone-powder in 4 ml 1% Lidocaine-hydrochloride-solution. Inject intragluteal deep into the muscle. Never inject Lidocaine IV!</em></td>
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*Exclude additional STI!*
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<td><strong>contacts!</strong></td>
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<td><strong>Serovars A-C</strong></td>
<td></td>
<td><strong>trachoma</strong></td>
<td><strong>Doxycycline 100 mg PO bid 7d</strong></td>
<td><strong>Azithromycin</strong> ** 500 mg PO qd 3d**</td>
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<td>(Not in pregnancy)</td>
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<td>In advanced disease therapy according</td>
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<td>to SAFE-criteria***</td>
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<td><strong>Serovars D-K</strong></td>
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<td><strong>urethritis, cervicitis, pharyngitis, proctitis</strong></td>
<td><strong>Doxycycline 100 mg bid PO 7d</strong></td>
<td><strong>Azithromycin</strong> ** 1.5 g PO as single dose**</td>
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<td>Not in pregnancy</td>
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<td><strong>Pregnancy</strong></td>
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<td><strong>Azithromycin</strong> ** 1.5 g PO as single dose**</td>
<td>off-label use</td>
<td><strong>Erythromycin</strong> ** 500 mg PO qid 7d**</td>
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<td><strong>Children</strong></td>
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<td><strong>Children &lt;45 kg:</strong></td>
<td><strong>Erythromycin 10 mg/kg PO qid 14d</strong></td>
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<td><strong>Children ≥8 YO or ≥45 kg:</strong></td>
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<td><strong>Azithromycin 1 g PO as single dose</strong></td>
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<tr>
<td><strong>Serovars L1, L2, L3</strong></td>
<td></td>
<td><strong>lymphogranuloma venereum (LGV) or (hemorrhagic) proctocolitis</strong></td>
<td><strong>Doxycycline 100 mg PO bid ≥21d</strong></td>
<td><strong>Azithromycin 1.5 g PO as single dose on days 1, 8, 15</strong></td>
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<td>(Not in pregnancy)</td>
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<td><strong>Erythromycin 500 mg PO qid 21d</strong></td>
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<td><strong>Inguinal abscess (bubo): surgical incision!</strong></td>
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</table>

- Cave: due to hepatotoxicity erythromycin estolate contraindicated during pregnancy!
- **For coinfection with M. genitalium azithromycin PO for 5 days (day 1: 500 mg qd; days 2–5: 250 mg qd) might be the better choice.**
- **Surgery, antibiotics, face washing (to prevent super-infection), environmental improvements (esp. lid surgery)**

**Test of cure (NAAT) no earlier than 6 weeks after start of therapy!**

Proctitis in MSM or HIV-coinfection: exclude infection by L 1-3 serovars.

* NAAT
  - Specimen: first voided urine, swab (cervical, urethral, vulvovaginal, anal, conjunctival, pharyngeal)

**Surgery, antibiotics, face washing (to prevent super-infection), environmental improvements (esp. lid surgery)**

Test of cure mandatory!
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</thead>
</table>
| **Non-Gonococcal Urethritis (NGU)** | Symptomatic acute urethritis | Doxycycline 100 mg PO bid 7-10d  
*Not in pregnancy* | Azithromycin PO for 5 days  
(day 1: 500 mg; days 2-5: 250 mg). | Urethral swab: Microscopy, NAAT for C. trachomatis and N. gonorrhoeae. Start calculated therapy after adequate sampling. |
| | Recurrent Urethritis | After first course with Doxycycline: Azithromycin PO for 5 days  
(day 1: 500 mg; days 2-5: 250 mg).  
After first course with Azithromycin: Doxycycline 100 mg PO bid 7-10d | If recurrent after 5 days on Azithromycin or NAAT positive for Mycoplasma genitalium: Moxifloxacin 400 mg PO qd 7d | NAAT for Mycoplasma genitalium (MG). If NAAT positive for MG: test of cure 4-6 weeks post treatment (NAAT). |
| **Non-Gonococcal Non-Chlamydial Urethritis (NGNCU)** | Recurrent Urethritis  
NAAT negative for both chlamydia and gonococci | Doxycycline 100 mg bid PO 7d | Clarithromycin 500 mg bid p.o 7d  
(well tolerated in pregnancy, off label use)  
Azithromycin 1.5 g as single dose PO (resistance may occur) | NAAT: test should differentiate U. urealyticum and U. parvum as U. urealyticum is the more probable cause of NGNCNMGU: U.parvum is responsible in rare cases. Culture cannot differentiate these two. |
| **Ureaplasma urealyticum** | Consider diagnosis only in cases of NGNCU which are NAAT-negative for Mycoplasma genitalium (NGNCNMGU) | Doxycycline 100 mg bid PO 7d | Moxifloxacin 400 mg PO qd 7d (in case of resistance to Azithromycin) | NAAT (specimen: swab (wie Kultur), first void-urine)  
Test of cure 4-6 weeks after start of therapy. |
| **Mycoplasma genitalium** | Urethritis positive for M. genitalium (NAAT) | Azithromycin PO for 5 days  
(day 1: 500 mg; days 2-5: 250 mg) or 250 mg qd 6d  
Test of cure!  
Cave: Resistance | Moxifloxacin 400 mg qd PO 7-10d (in case of resistance to Azithromycin) | *Cave cross-allergies with β-lactame-type antibiotics* |

*Exclude additional STIs!*
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<td>Pelvic inflammatory Disease (PID) – Salpingitis</td>
<td>Women</td>
<td>• Doxycycline 100 mg bid PO 14d plus Metronidazol 500 mg bid PO 14d</td>
<td>• Azithromycin 1.5 g PO as single dose plus Metronidazol 500 mg bid PO 14d</td>
<td>• Culture for N. gonorrhoea, NAAT for Chlamydia trachomatis, N. gonorrhoea, and if possible for Mycoplasma genitalium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If positive for M. genitalium or PID recurrent after Doxycycline: Moxifloxacin 400 mg qd PO 14d</td>
<td>Gonorrhoe: medication above plus Ceftriaxone 1.0 g IV/PO as single dose</td>
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<tr>
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<tr>
<td></td>
<td>Men</td>
<td>• Doxycycline 100 mg bid PO 14d If gonorrhea is suspected or proven: Ceftriaxone 1.0 g IV/IM plus Azithromycin 1.5 g PO both as single dose</td>
<td>If STI is unlikely (older males): Ceftriaxone 250 mg IM as single dose Ciprofloxacin 500 mg bid PO 3d Erythromycin 500 mg tid PO 7d</td>
<td>Culture for N. gonorrhoea, NAAT for Chlamydia trachomatis, N. gonorrhoea, and if possible for Mycoplasma genitalium Males &gt;35 YO: urine culture</td>
</tr>
<tr>
<td>Epididymitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chancroid / Ulcus molle Haemophilus ducreyi</td>
<td>Adults</td>
<td>• Azithromycin 1.5 g PO as single dose (In HIV- and HSV-coinfection failure to therapy with Azithromycin 1.0 g three times more common)</td>
<td>Ceftriaxone* 250 mg IM as single dose Ciprofloxacin 500 mg bid PO 3d</td>
<td>Culture (special media) NAAT specimen: swab/tissue</td>
</tr>
<tr>
<td>Granuloma inguinale (Donovanosis) Klebsiella granulomatis</td>
<td>Adults</td>
<td>• Cotrimoxazole 960 mg bid PO 21d (1 Tabl. = 160 mg TMP + 800 mg SMO)</td>
<td>• Doxycycline 100 mg bid PO 21d (Not during pregnancy) Azithromycin 1.0 g/week PO day 1,8,15 Ciprofloxacin 500 mg bid PO 21d</td>
<td>Microscopy (Giemsa-stain) specimen: swab/tissue</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>Adults vaginitis, urethritis</td>
<td>• Metronidazole 2.0 g PO as single dose Pregnancy: Metronidazole 2x 500 mg PO 10d Allergy: Desensitization or concomitant use of glucocorticoids 1.5 mg/kg (not in case of type 1-allergy!)</td>
<td>Failure of therapy: Metronidazole 4.0 g qd PO 3-5d Recurrence: Metronidazole 2.0 g qd PO 3-5d or 500 mg bid PO 7d</td>
<td>Microscopy (direct, dark field or phase contrast) Culture, NAAT (specimen: urogenital swab)</td>
</tr>
</tbody>
</table>

Exclude additional STI!
<table>
<thead>
<tr>
<th>Diseases</th>
<th>Infection</th>
<th>Standard therapy</th>
<th>Alternatives</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Herpes genitalis (HSV)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Herpes simplex, Genital herpes | **Adults** primary infection (urethritis, vulvovaginitis, proctitis, gingivostomatitis, balanoposthitis) | • Aciclovir 400 mg tid PO 7-10d or 200 mg five times daily PO 7-10d  
• Famiclovir 250 mg tid PO 7-10d  
• Valaciclovir 500 mg bid PO 7-10d  
For severe cases Aciclovir tid 5 mg/kg IV 5-7d (10d with immunosuppression) | | • Clinical signs/symptoms  
• NAAT (specimen: swab, tissue)  
• Antigen-test (point of care test: fast, but low sensitivity; specimen: swab) |
| | **Adults** <5 recurrences per year, therapeutic | • Aciclovir: 800 mg bid PO 5d or 400 mg tid PO 5d or 800 mg tid PO 2d  
• Famiclovir: 125 mg bid PO 5d or 1.0 g bid PO (one day only)  
• Valaciclovir: 500 mg bid PO 3d or 1.0 g qd PO 5d  
For mild cases topical aciclovir or foscarnten-sodium (especially in pregnancy not sufficient!)  
*Initiate therapy as soon as first symptoms & signs of reactivation become present!* | | |
| | **Adults** ≥5 recurrences per year, preventive | • Aciclovir 400 mg bid PO (sometimes 400 mg once daily PO may be sufficient) or Aciclovir 200 mg qid PO (Recommended in pregnancy because of volume of distribution)  
• Famiclovir 250 mg bid PO  
• Valaciclovir: 500-1000 mg qd PO  
*Test the need for continuation by treatment interruptions every 6 or 12 months.* | | |
| | **Pregnancy** primary infection | • Aciclovir 200 mg five times daily PO 10d | | |
| | **Pregnancy** reactivation during 1st and 2nd trimester | • Aciclovir 400 mg tid PO 10d | | |
| | **Pregnancy** preventive | • Aciclovir 400 mg tid PO from 36th gestational week until delivery  
• Valaciclovir 250 mg bid PO from 36th gestational week until delivery | | |
| | **Immunosuppression** (e.g. HIV) | Increased dosing, prolonged treatment periods, and intravenous application may be warranted!  
*Cave: Nephrotoxicity!* | | |

**Exclude additional STI!**
<table>
<thead>
<tr>
<th>Diseases</th>
<th>Infections</th>
<th>Therapy indications</th>
<th>Therapy</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis A (HAV)</strong></td>
<td>Adults</td>
<td>• Acute HAV infection</td>
<td>• Symptomatic therapy</td>
<td>• HAV-serology Anti-HAV IgM (specimen: serum)</td>
</tr>
<tr>
<td><strong>Hepatitis B (HBV)</strong></td>
<td>Adults with Acute HBV</td>
<td>Rate of spontaneous remission 95-99% • Antiviral therapy only if signs of impaired liver function, prothrombin time &lt; 50%</td>
<td>• Symptomatic therapy</td>
<td>• HBV-serology (specimen: serum): HBsAG pos. and Anti-HBc IgM pos.</td>
</tr>
<tr>
<td></td>
<td>Adults with Chronic HBV</td>
<td>Definition: HBs-AG pos. &gt; 6 months • HBV-DNA &gt; 2,000 IU/ml and elevated ALT/GPT or Histology: minimal inflammatory activity / low grade fibrosis or High grade fibrosis / cirrhosis and pos. HBV-PCR</td>
<td>Nucleoside/Nucleotide-analogs¹ ²</td>
<td>• If so HBV-NAAT • Exclude coinfecion with HDV: HDV-serology, if so HDV-NAAT (specimen serum, EDTA)</td>
</tr>
<tr>
<td></td>
<td>Adults with Chronic HBV and HIV-coinfection</td>
<td>Definition: HBs-AG pos. &gt; 6 months • HBV-DNA &gt; 2,000 IU/ml and elevated ALT/GPT or Histology: minimal inflammatory activity / low grade fibrosis or High grade fibrosis / cirrhosis and pos. HBV-PCR</td>
<td>• CD4 &gt; 500/µl + no indication for ART³ : no indication for HBV-therapy: monitor closely if HBV-therapy indicated: - early ART⁴ incl. TDF+FTC or 3TC - PEG-IFN α2a 180 µg weekly over 48 weeks (genotype A, raised transaminases, low HBV-PCR)</td>
<td>• HBV-serology (specimen: serum): HBsAG pos. and Anti-HBc IgM pos.</td>
</tr>
</tbody>
</table>

1-9 Comments see last page for Hepatitis

Exclude additional STI!
### Diseases

<table>
<thead>
<tr>
<th>Hepatitis C (HCV)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For therapy of HCV consult latest guidelines!</strong> (see below). Treatment in specialised centres is preferred.</td>
</tr>
<tr>
<td><strong>New substances available in the near future will allow treatment of HCV/HIV-coinfected persons in the same way as persons with HCV-monoinfection. The following substances are expected to be licensed within the next 12 months:</strong></td>
</tr>
<tr>
<td>Sofosbuvir = SOF, Simeprevir = SMV, Daclatasvir = DCV, Dasabuvir = DAV, Ombitasvir = OBV and a fixed combination of Sofosbuvir plus Ledipasvir = SOF/LDV</td>
</tr>
</tbody>
</table>

### Therapy indications

- **Adults with acute HCV**
  - Definition: HCV of <6 months duration
  - Rate of spontaneous healing: 15-50%
  - Positive HCV-PCR persists for >3-4 months
  - Decision for therapy depends on expected cure rate, relative contraindications, and adherence

- **Adults with chronic HCV**
  - Definition: HCV-PCR pos. > 6 months
  - Chronic HCV without contraindications for antiviral therapy

### Therapy

- **Durable response (SVR5):**
  - HCV-NAAT neg. 24 weeks after completed therapy

### Diagnostics

- **HCV-serology:** Anti-HCV (specimen: serum) – may be still negative
- **HCV-NAAT (specimen: EDTA)**
- **HCV-NAAT quantitative; specimen: EDTA**
- **HCV-genotyping (specimen: EDTA)**

---

### Adults with acute HCV

**Definition:** HCV of <6 months duration<br>**Rate of spontaneous healing:** 15-50%
- **Decision for therapy**
  - **Positive HCV-PCR persists for >3-4 months**
  - **Decision for therapy depends on expected cure rate, relative contraindications, and adherence**

**Therapy indications**

- **PEG-Interferon α 2a or 2b SC over 24 weeks**
  - **PEG-IFN α 2a:** 180 µg SC weekly
  - **PEG-IFN α 2b:** 1.5 µg/kg SC weekly
  - **Response rate:** 85-98%

**Durable response (SVR5):**

- **HCV-NAAT neg. 24 weeks after completed therapy**

**In the near future same therapy as for chronic HCV (Licence to be awaited).**

**Exceptions:**

- **I. Genotype 2 can be treated without IFN α**
- **II. Genotype 3: RBV + SOF for 24 weeks obligatory.**

**In case of cirrhosis: alternative therapy (see below).**

**Alternatives genotype 1 and 4:**

- **PEG-IFN + RBV + SMV for 12 weeks + 12-36 weeks with PEG-IFN + RBV (n/a for subtype 1a with Q80K-Mutation!)**
- **PEG-IFN + RBV + DCV for 24 weeks**
- **In case of contraindications for Interferon:**
  - **SOF + RBV** for 24 weeks
- **SOF + SMV for 12 weeks**
- **SOF + DCV for 12 weeks**
- **SOF + LDV for 12 weeks / genotype 1 only**

**Alternatives genotype 3:**

- **SOF + RBV for 24 weeks**
- **SOF + DCV for 12 weeks (treatment-naïve) or for 24 weeks (pretreated)**

---

**Exclude additional STI!**

**Comments see last page for Hepatitis**
### Hepatitis C with HIV-coinfection

#### Adults with acute HCV and HIV-coinfection
- **Definition:** HCV-infections being present for no longer than 12 months, as documented by negative HCV-NAAT and/or Anti-HCV antibody tests.

<table>
<thead>
<tr>
<th>Therapy indications</th>
<th>Therapy</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HCV-NAAT decreased by less than 2log after 4 weeks</td>
<td>• PEG-IFN α 2a or 2b, dosing see above</td>
<td>• HCV-Serology: Anti-HCV (specimen: serum) – (may be still negative!)</td>
</tr>
<tr>
<td>• HCV-NAAT still positive after 12 weeks</td>
<td>• Ribavirine (body weight adapted), 1,000 (&lt;75 kg) -1200 (&gt;75 kg) mg PO</td>
<td>• HCV-NAAT (specimen: EDTA)</td>
</tr>
<tr>
<td>• Spontaneous cure rate &lt;20%</td>
<td>• Length of therapy: 24 weeks, only if RVR (^8); else 48 weeks</td>
<td>• HCV-NAAT quantitative; specimen: EDTA</td>
</tr>
<tr>
<td></td>
<td>• Sustained viral response (SVR (^5)): HCV-NAAT negative for at least 24 weeks after discontinuation of therapy</td>
<td>• HCV-genotype (specimen: EDTA)</td>
</tr>
</tbody>
</table>

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**In the near future same therapy as for chronic Hepatitis C (await licensing)!**

#### Adults with chronic HCV and HIV-coinfection
- **Stable viral response (SVR \(^5\)) very likely**
- **No contraindications for any antiviral therapy**
- **If CD4 <500/µl start with ART \(^6\) first**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same therapy as for chronic disease without HIV-infection</td>
<td>• HCV-Serology: Anti-HCV (specimen: serum)</td>
</tr>
<tr>
<td>Cave reduce daily DCV dose to 30 mg if ART contains boosted protease-inhibitor; raise daily DCV dose to 90 mg if ART contains EFV!</td>
<td>• HCV-NAAT (pos. &gt;6 Mon.) (specimen: EDTA)</td>
</tr>
<tr>
<td>SMV not recommended together with COBI, EFV, ETR, NVP, RTV, protease-inhibitor only Abacavir.</td>
<td>• HCV-NAAT quantitative; specimen: EDTA</td>
</tr>
<tr>
<td></td>
<td>• HCV-genotype (specimen: EDTA)</td>
</tr>
<tr>
<td></td>
<td>• Abdominal ultrasound</td>
</tr>
<tr>
<td></td>
<td>• optional liver biopsy – only if cosequence for diagnosis, course, or therapy</td>
</tr>
<tr>
<td></td>
<td>- optional FibroScan</td>
</tr>
</tbody>
</table>

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**Cirrhosis:** HCC- and screening for varices

#### References:

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1. Regarding the choice of individual agents please consult the above-mentioned guidelines.
2. Hepatological consultation is recommended.
3. Note contraindications (e.g. progressive or decompensated liver cirrhosis, pregnancy, breast feeding).
4. Note contraindications and interactions with antiretroviral agents or other concomitant medications!
5. SVR: Sustained viral response.
6. ART: Antiretroviral therapy.
7. DAA: Direct active antivirals (e.g. protease-inhibitors, polymerase-inhibitors, NS5A-inhibitors)
8. RVR: Rapid viral Response – HCV-PCR neg. after 4 weeks on therapy.
9. In the individual patient (negative predictors) a prolonged course of therapy (24 weeks) may be preferred.
**HIV-Infection**

**Human Immunodeficiency Virus**

Expert consultation recommended for the carrying out of treatment!

**Adults**

**Initial HAART** (Start at CD4 cells <500/µl)

**N(t)RTI:**
- Tenofovir$^6$ 245 mg/ Emtricitabine 200 mg qd
- Abacavir 600 mg$^1$ / Lamivudine 300 mg qd

**Alternative:**
- Tenofovir$^6$ 245 mg/ Lamivudine 300 mg qd

**NNRTI:**
- Efavirenz 600 mg$^2$ qd
- Nevirapine 200 mg qd; after 14 days 400 mg qd$^3$
- Rilpivirine 25 mg qd$^4$

**PI:**
- Atazanavir/r 300/100 mg qd
- Darunavir/r 800/100 mg qd
- Lopinavir/r 800/200 mg qd (or 400/100 mg bid)
- Efavirenz/r 700/100 mg bid

$r$ = boosted with Ritonavir

**INI:**
- Raltegravir 400 mg bid
- Elvitegravir$^5$ 85 (or 150) mg qd
- Dolutegravir 50 mg qd (if resistance to INI: 100 mg qd)

**Combination drugs with 2-agents:**
- Kivexa® once daily (Abacavir+Lamivudine)
- Truvada® once daily (Tenofovir+Emtricitabine)
- Combivir® once daily (Zidovudine+Lamivudine)

**3 agents:**
- Atripla® 6 once daily (Efavirenz+Tenofovir+Emtricitabine)
- Eviplera® once daily (Tenofovir+Emtricitabine+Rilpivirin)
- Stribild® once daily (Elvitegravir+Cobicistat+Tenofovir+Emtricitabine)
- Trizivir® twice daily (Abacavir+Lamivudine+Zidovudine)
- Triumeq® once daily (Dolutegravir+Abacavir+Lamivudine)

Recommendations adapted from German-Austrian guidelines, as of April 2012

1. Use only if screening for HLA-B*5701 is negative. Use with caution in case of plasma viraemia >100,000 copies/ml or high cardiovascular risk (Framingham score >20%/10 years).
2. Not during pregnancy or for women wishing to have children.
3. Use with caution in patients with active liver disease, in men with CD4 cell counts >400/µl, and in women with CD4 cell counts >250/µl.
4. Cave: not if HIV-RNA >100,000 copies/ml (not licensed).
5. Licensed only Cobicistat-boosted for initial therapy.

**Pregnancy / Children**

Every pregnant woman should be advised to be tested for HIV. HIV-positive pregnant women and children exposed to HIV should be treated according to the German-Austrian Guidelines on HIV in pregnancy and newborns exposed to HIV (http://dstig.de/literaturleitlinienlinks/leitlinien.html). Aim of therapy: Reduction of the HIV viral load below the limit of detection by the time of delivery (vaginal or section). Therapy: Choice of ART regimen based on teratogenic risk. Initiation of HAART from week 13 of pregnancy onwards regardless of maternal treatment indication. Use of TDF / FTC and ABC / 3TC as a backbone. Efavirenz should be avoided during the first trimester (CAVE: neural tube defects). Preferred protease inhibitors: Lopinavir, Atazanavir, Saquinavir. Integrase Inhibitors (RAL) maybe continued and are suitable treatment options in case of undetectable viral load during the 3rd trimester. Expert consultation is recommended for therapy and choice of way of delivery. Breastfeeding is not recommended.

Exclude additional STI!
**Indication for Post-Exposure Prophylaxis (PEP) after possible exposure to HIV**

Start PEP as soon as possible – ideally within two hours - effectiveness highly questionable beyond ≥72 hours post-exposure

### Sexual Contact, serostatus of sex-partner is...

- HIV positive
  - condoms used or
  - oral sex or
  - viral load <50 copies/ml ...................................................

- or
  - unprotected anal or vaginal sex or condom burst

- HIV positive
  - viral load 50-1,000 copies /ml and no other STI especially if without ART ...................................................

- or
  - HIV positive
    - viral load >1,000 copies /ml or viral load unknown or without ART ...................................................

- or
  - serostatus unknown (if so, start PEP until HIV test result comes in)

- partner is MSM / bisexual or active IVDA or
  - is from region of high HIV prevalence........
  - is heterosexaul (sexworkers too) or
  - is not from a region of high HIV prevalence or
  - is not an active IVDA........................................

- In case of rape ........................................

**Occupational exposure (index-person is HIV-positive)**

**Rapid response:** Irrigation with water ± soap or an antiseptic solution (which should be virucidal).

**In case of...**

- massive inoculation (>1ml) of whole blood or other (body-) fluid with (potentially) high concentration of virus particles...................................................

- (bleeding) percutaneous penetration (e.g. needle); cut with contaminated sharp instrument (e.g. lancet) and
  - index person’s viral load >50 copies/ml ......
  - index person’s viral load ≤50 copies/ml ......

- superficial lesion without bleeding; contamination of mucosal membranes or injured skin to fluid with possibly high viral load
  - index person’s viral load >50 copies/ml ........
  - index person’s viral load ≤50 copies/ml ........

- percutaneous contact with body fluids other than blood; contact of uninjured skin with blood (even if viral load is high); contact of skin or mucous membranes with body fluids such as urine or saliva...

**PrEP is recommended for individual cases...**

- HIV discordant couples wishing to have children, IVDUs, special circumstances

**medication:** Truvada® once daily, individual duration of therapy; off-label use, the coverage of costs has to be discussed individually (also for laboratory controls).

**Important:** before the start of PrEP: Negative HIV-Antigen-test required and serology; during PrEP: regular laboratory controls

Adapted according to CDC, 2012.

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**PRE-EXPOSURE PROPHYLAXIS (PrEP)**

**PrEP is recommended for individual cases...**

**medication:** standard prophylaxis (30 days): Isentress® 400 mg twice daily plus Truvada® once daily; alternatively Kaletra® twice daily plus Combivir® twice daily. Depending on the indexed patient’s therapy, another regimen might be necessary. Expert consultation is recommended.

PEP is always indicated for babies born to mothers with HIV infection, cf. latest German-Austrian Guideline.

Adapted according to Deutsch-Öster: Leitlinie zur medikamentösen PEP nach HIV-Exposition, 2013: http://dstig.de/literaturleitlinienlinks/leitlinien.html
<table>
<thead>
<tr>
<th>Diseases</th>
<th>In...</th>
<th>Standard therapy</th>
<th>Alternatives</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPV-Infection</td>
<td>Human Papillomavirus</td>
<td>cervical, pharyngeal, vulvar, and vaginal neoplasias or cancers: Consult relevant guidelines!</td>
<td>Vaccination: • Recommended for girls and boys 9–14 YO (before first sexual contact).</td>
<td>• Clinical (genital warts), colposcopy whitening with acetic acid (1-5%), histopathology, exclude syphilis (serology) • HPV-NAAT, hybrid capture (specimen: swab, tissue)</td>
</tr>
<tr>
<td>External genital warts in adults</td>
<td></td>
<td>• Podophyllotoxin 0,5% solution or gel, 0,15% cream; bid for 3 days, then 4 days off therapy (4 cycles) • Imiquimod 5% cream thrice weekly for up to 16 weeks • Sinecatechines - or green tea-catechines: 10% ointment tid for up to 16 weeks • Cryotherapy • Trichlor acetic acid (TCA) 80-85% solution • Excision, curettage, electrosurgery/laser (CO₂)</td>
<td>Pregnancy: • Trichlor acetic acid (TCA) 80-85% solution, cryotherapy, laser (CO₂), excision</td>
<td></td>
</tr>
<tr>
<td>Anal intraepithelial neoplasia (AIN)</td>
<td></td>
<td>Ablative therapy: • Electrosurgery, if appropriate combined with excision • Laser-surgery (CO₂) • Infrared-coagulation (not licensed in Germany)</td>
<td>Topical therapy: • Peri-anal lesions: Imiquimod (5% cream thrice weekly, 16 weeks) • Intra-anal lesions: 5% Imiquimod-suppositories¹ or 85% trichlor acetic acid (TCA) (e.g. every four weeks for up to 12 weeks) • 5% 5-FU bid for up to 16 weeks (in comparison to imiquimod increased rate of local irritation)</td>
<td>• Digital rectal examination • Screening (offered to all patients on higher risk for AIN): anal cytology (procedure analog to cervical cytology) If ASCUS-ASC-H, LSIL, HSIL: High resolution-anoscopy: 1. Application of 5% acetic acid or Lugol’s solution (e.g. moistened swab) for 2 minutes. 2. Introduction of anoscope, tender focussing of colposcope (distance about 30 cm). 3. Examination starts in the distal rectum (highest resolution), slow retraction and close examination of linea dentata-region (transformational zone), then examination of anal canal and perianal area. 4. Photodocumentation • Take (multiple) biopsies of all suspicious lesions!</td>
</tr>
<tr>
<td>Anal margin carcinoma</td>
<td></td>
<td>• Wide excision whenever possible (as a rule &lt; 2 cm)</td>
<td>• Radio-chemotherapy if complete excision is not possible</td>
<td></td>
</tr>
<tr>
<td>Anal canal carcinoma</td>
<td></td>
<td>• Combined radio- and chemotherapy: radiation 50 Gy (1.8 Gy per day) 5-FU (1,000 mg/m², days 1–5 and days 29–33) and mitomycin-C (10 mg/m², days 1&amp;29)</td>
<td>• Surgical excision of small tumors (&lt; 2 cm in diameter)</td>
<td></td>
</tr>
</tbody>
</table>


Exclude additional STI!
<table>
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<tr>
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<th>Alternatives</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bacterial Vaginosis</strong></td>
<td>Adults</td>
<td>Topical treatment: • Metronidazole 1 g intravaginal once daily for two days <strong>Not during breastfeeding</strong>&lt;br&gt;Systemic treatment: • Metronidazol 400 mg bid PO 7d • Clindamycine 300 mg bid PO 7d <strong>In pregnancy only if strictly indicated, not during breastfeeding!</strong></td>
<td>Topical treatment: • Intravaginal Clindamycine cream 2%, once daily 7d • Ascorbic acid, lactic acid (ovula, vaginal tablets) optionally after Therapy as prophylaxis&lt;br&gt;Systemic treatment: • Amoxicillin 750 mg tid PO 7d <strong>As well in pregnancy during 1. trimester</strong></td>
<td>• Clinical / microscopy (3 of 4 criteria): 1. homogeneous non-purulent fluor 2. vaginal fluid pH &gt;4 3. fishy smell (provocation test: 10% KOH) 4. “clue cells” (Gram or Methylene Blue) (specimen: vaginal swab)</td>
</tr>
<tr>
<td><strong>Candida-Infection</strong></td>
<td>Adults</td>
<td><strong>vulvovaginal candidose, balanitis or balanoposthitis candidomycetica</strong>&lt;br&gt;<strong>Partner therapy (only for partners who are clinically affected)</strong>&lt;br&gt;Topical treatment (women): • Clotrimazole 200 mg vaginal tablets qd before bedtime 3d or 500 mg as single dose or 100 mg daily for 6d • Nystatin 1-2 vaginal tablets qd before bedtime 3d • Ciclopiroxolamine with applicator vaginal cream (5 g) once daily 6d&lt;br&gt;Topical treatment (men): • Nystatin-paste bid 5-7d • Clotrimazole bid 7d • Ciclopiroxolamine-cream up to three times daily 5-7d</td>
<td>Systemic treatment: • Fluconazole 150 mg PO as single dose • Itraconazole 2x 200 mg PO as single dose (postprandial)&lt;br&gt;C. krusei: • Clotrimazole bid 7d (topical treatment) alternatives: • Posaconazole PO 1st day: 200 mg, 2nd-14th day: 100 mg, 14d or • Voriconazole PO 1st day: 400 mg, 2nd + 3rd day: 200 mg&lt;br&gt;C. glabrata: Frequently unresponsive to Posaconazole / Voriconazole; if so, Micafungin off-label use, individual decision</td>
<td>• Clinical / microscopy or culture evidence of yeasts (Sabouraud agar) (specimen: vulvovaginal-, penile-, analswab) • Differentiation by chromagar or API-test (detection of primarily resistant Candida species)</td>
</tr>
<tr>
<td><strong>Candida-albicans</strong></td>
<td>Adults</td>
<td>• Fluconazol 200 mg p.o. 1 x daily. 6-12 months in graduated doses</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diseases</th>
<th>In...</th>
<th>Standard therapy</th>
<th>Alternatives</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scabies</strong>&lt;br&gt; <em>Sarcoptes hominis</em></td>
<td><strong>Adults</strong></td>
<td>• Permethrin 5%-cream, single treatment, or once for ≥8 hrs residence time. Repeat after 14d if needed.</td>
<td>• Ivermectin 200 µg/kg PO as single dose repeat after 2 weeks (Preferred treatment for scabies crustosa) Not in pregnancy!</td>
<td>• Clinical diagnosis, detection of mites (microscopy of scrapings, dermatoscopy), histology</td>
</tr>
<tr>
<td><strong>Close contacts should be treated!</strong></td>
<td></td>
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<tr>
<td><strong>Pediculosis pubis, Phthiriasis (Crab lice)</strong>&lt;br&gt; <em>Phthirius pubis</em></td>
<td><strong>Adults</strong></td>
<td>• Permethrin 1%-cream: once for 10-minutes residence time&lt;br&gt;• Permethrin (1%) + Piperonylbutoxid + Malathion as pump spray&lt;br&gt;After topical treatment comb out eggs! During pregnancy: only if strictly indicated!</td>
<td>• Ivermectin 200 µg/kg PO as single dose Not in pregnancy!</td>
<td>• Detection of crab lice and their eggs perigenital, axillae, beard, eye lashes (magnifying glass), microscopy of scraping</td>
</tr>
</tbody>
</table>

Exclude additional STI!
VACCINATIONS – RECOMMENDATIONS FOR STI PREVENTION

Vaccination is one of the most effective methods of preventing infectious diseases. Therefore advice on vaccinations is an important element of an STI consultation; patients should be encouraged to check their vaccination status.

**Hepatitis A:** Vaccination against hepatitis A is recommended for individuals engaging in high-risk sexual practices (particularly oral-anal sexual practices).

**Vaccination scheme:**
- monovalent vaccine: 2 vaccinations 6-12 months apart
- bivalent hepatitis A/B-vaccine: 2 vaccinations 4 weeks apart, 3rd vaccination after 6 months

**Hepatitis B:** Vaccination against hepatitis B is included in the routine childhood vaccination schedule. It is recommended for adults with an increased risk of hepatitis B (e.g. medical staff) who were not vaccinated as children. These include people who change their sexual partners frequently, who have sexual contact with HBs-Ag-positive partners or who travel to high-risk countries.

**Vaccination scheme:**
- monovalent vaccine: 2 vaccinations 4 weeks apart, 3rd vaccination after 6 months.
- bivalent hepatitis A/B-vaccine: 2 vaccinations 4 weeks apart, 3rd vaccination after 6 months

**HPV-vaccination:** Vaccination against HPV is recommended as a routine immunisation for all female teenagers between the age of 9-14 years. In case of missed vaccination dose repetition is recommended up to the age of 18 years. Also male teenagers, young men and women older than 18 may benefit from vaccination. For the effective prevention of HPV infection and their sequelae the primary immunisation course should be completed before first sexual contact.

**Vaccination scheme:**
- tetravalent vaccine (type 6,11,16,18): until the age of 13: 2 vaccinations (0., 6. month); from the age of 14: 3 vaccinations (0.,2.,6. month)
- bivalent vaccine (type 16,18): until the age of 13: 2 vaccinations (0., 6. month); from the age of 14: 3 vaccinations (0.,2.,6. month)

**Pneumococcal vaccination:** Recommended for adults aged 60 or over, for infants aged between 2 months to 2 years and for immunosuppressed patients (every 5 years).

**Meningococcal vaccination:** Recommended for immunodeficient patients and travelers to high-risk areas. In January 2013 the recommendation was extended to MSM in Berlin following several case reports of fatal infections.

**Vaccination scheme:**
- give single dose of quadrivalent conjugate vaccine provided it is licensed for the respective age group. In patients already vaccinated with polysaccharide vaccine boost with conjugate vaccine (no earlier than after 2 months).

The first meningococcal serogroup B vaccine has been available in Germany since 2014, which is currently surveyed by the STIKO.

**Vaccination in HIV-infected patients:** In addition to the standard recommendations, pneumococcal vaccination (every 5 years) and influenza vaccination (once a year). Additionally, single dose of meningococcal vaccine can be given to HIV-infected patients. In general, inactivated vaccines can be given independent of CD4 cell count, though CD4 counts of <200 cell/µl are associated with lower response rates; nonresponders should consider revaccination when their immune status has improved. Live, attenuated vaccines should be avoided in patients with CD4 counts of <200/µl CD4 because of an increased risk of illness (vaccine strain). In patients with CD4 counts of 200-500 cells/µl decisions on vaccinations should be based on individual risk-benefit considerations. Measles / mumps / rubella vaccine is recommended for children and individuals born after 1970 who lack evidence of a 2nd vaccination.
FREQUENTLY ASKED QUESTIONS:

What is considered to be the best treatment for triple infections with syphilis, gonorrhoea, and chlamydia/ureaplasma/mycoplasma?
Azithromycin 1.5 g PO, plus Ceftriaxone 1 g IV/IM, plus Benzathine penicillin G 2.4 million units IM.
If Benzathine penicillin is not available: Ceftriaxone 2 g daily for 10 (early syphilis) or 14 (late syphilis) days; plus Azithromycin 1.5 g single dose on the first day. (Remember to arrange for tests of cure for gonorrhoea, chlamydia and syphilis)

Why is a test of cure required?
Resistance to antibiotics and other factors may impact therapies. Such cases of treatment failure may remain undetected without a clinical or microbiological test of cure.

When is a partner therapy indicated?
Advice on partner therapy should take the following issues into consideration:
• symptoms and clinical condition of the person(s) the index patient had sexual contacts with (as reported by the index patient or on basis of clinical diagnostics)
• therapy: possible side effects and individual risks (oral/parenteral application, allergy/anaphylaxis, other side effects, co-morbidity, if applicable) and resistance potential (prescribed drugs which might be used as self-medication; spectrum of effects of a specific substance)
• behaviour: expected adherence of the contact person, couple dynamics, sexual behaviour (together and each individually) (anamnesis history)
• pathogenic characteristics: contagiosity, incubation and latency period, sensitivity of the testing process

When should patients be tested for other STI?
If an STI is diagnosed in a patient (s)he should be tested for other STI as well (e.g. HIV, syphilis: serologically; gonorrhea and chlamydia by NAAT, HPV clinically).
THE DSTIG
The DSTIG is the German society for sexually transmitted infections whose primary mission is the promotion of sexual health. It has undertaken the responsibility of gaining and spreading knowledge of sexually-transmitted infections. It brings together different subject-areas: Gynaecology, Urology, Dermatology, Psychology, Epidemiology, Social Sciences, the field of ‘Public Health’ as well as many other occupational groups. Its members are made up from those working in surgeries, clinics and research, the public health service, and non-governmental organisations. A fundamental component of the DSTIG’s work is the development of therapy guidelines.

Sections: Members of the DSTIG work together in different sections. The study groups of the DSTIG are concerned with current clinical and therapeutic issues as well as topics of sexual health. They open up a discursive space, generate and promote knowledge. Presently the following sections exist:
- Section for Sexual Health
- Section for Guideline Development
- Section for Laboratory Diagnostics
- Section for STI-Induced Tumours
- Section for Further Education

Congresses: The DSTIG holds the German STI Congress every two years. In addition it conducts symposia, subject days and STI-trainings.

Membership: The DSTIG warmly welcomes new members, whether from the fields of medicine, public health, research, social science or counselling. Students are also welcome!

Upcoming events as well as information regarding membership and guidelines can be found at www.dstig.de.
This STI-Treatment Pocket Guide was developed in particular by the members of the German STI Society, especially by

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We thank the German Dermatological Society (DDG) and the Catholic Clinic Bochum (KKB) for their support and collaboration.

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GILEAD Reference number: HIV/DE/14-04/NPM/1487_en
Gonorrhoea:
Urethral smear, numerous neutrophils with many intra-cellular gonococci in typical arrangement (methylene-blue; gonococci stained blue).

Syphilis:
White, shotty lesion on the tip of the tongue which cannot be wiped away.

Condylomata acuminata:
Sharp, demarcated exo-phytic tumor with prominent acanthosis, hyper- and parakeratosis, elongated and widened papillae. Dermis oedematous with lacunar dilated blood- and lymphatic vessels.

Source:
P. Altmeyer: Enzyklopädie der Dermatologie, Allergologie, Venerologie, Umweltmedizin

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German STI-Society
Promoting Sexual Health

STI-TREATMENT POCKET GUIDE

English edition 2014/2015

Source: P. Altmeyer: Enzyklopädie der Dermatologie, Venerologie, Allergologie, Umweltmedizin

www.enzyklopaedie-dermatologie.de