2001 National Guideline on the Management of Gonorrhoea in adults

Clinical Effectiveness Group (Association for Genitourinary Medicine and the Medical Society for the Study of Venereal Diseases).

Aetiology.

Gonorrhoea is the clinical disease resulting from infection with the gram-negative diplococcus *Neisseria gonorrhoeae.* The primary sites of infection are the mucous membranes of the urethra, endocervix, rectum, pharynx and conjunctiva. Transmission is by direct inoculation of secretions from one mucous membrane to another.

Clinical features.

Symptoms. [1 - 4]

Men :

- urethral infection commonly causes urethral discharge (80%) and/or dysuria (50%).
- infection can be asymptomatic (<10%).
- rectal infection in homosexual men may cause anal discharge (12%) or perianal/anal pain or discomfort (7%).
- pharyngeal infection is usually asymptomatic (>90%).

Women:

- infection is frequently asymptomatic (up to 50%).
- increased or altered vaginal discharge is the most common symptom (up to 50%).
- lower abdominal pain may be present (up to 25%).
- urethral infection may cause dysuria (12%) but not frequency.
- gonorrhoea is a rare cause of intermenstrual bleeding or menorrhagia.
- pharyngeal infection is usually asymptomatic (>90%).

Neisseria gonorrhoeae may co-exist with other genital mucosal pathogens, notably *Trichomonas vaginalis, Candida albicans* and *Chlamydia trachomatis.* If symptoms are present, they may be attributable to co-infecting pathogen.

Signs. [1,2]

Men:

- a mucopurulent or purulent urethral discharge is commonly evident.
- rarely, epididymal tenderness/swelling or balanitis may be present.

Women:

- mucopurulent endocervical discharge and easily induced endocervical bleeding (<50%). [Note: mucopurulent endocervical discharge is not a sensitive predictor of cervical infection (<50%).]
- pelvic/lower abdominal tenderness (<5%).
- commonly, no abnormal findings are present on examination.

Complications.

Transluminal spread of *N. gonorrhoeae* may occur from the urethra or endocervix to involve the epididymis and prostate in men (1% or less) and the endometrium and pelvic organs in women (probably <10%). Haematogenous dissemination may also occur from infected mucous membranes, resulting in skin lesions, arthralgia, arthritis and tenosynovitis. Disseminated gonococcal infection is uncommon (<1%).

Diagnosis.

- The diagnosis is established by the identification of *N. gonorrhoeae* at an infected site.
- Culture offers a readily available, sensitive (>95%) and cheap diagnostic test that also allows antimicrobial sensitivity testing. It is currently the method of first choice in the UK. Selective culture media containing antimicrobials are often used to reduce contamination [5].

Antigen detection tests are also available and may have advantages in detecting asymptomatic infection and when specimen transportation is delayed.

- Rapid diagnostic tests can be performed in addition to culture to facilitate immediate diagnosis and treatment. Microscopy (x1000) of gram stained genital specimens allows direct visualization of *N. gonorrhoeae* as monomorphic gram negative diplococci within polymorphonuclear leukocytes. In men, microscopy of urethral smears is more sensitive in symptomatic (90-95%) than in asymptomatic (50-75%) patients [1]. In women, the sensitivity of microscopy of gram stained endocervical smears is 37-50% and urethral smears (20%) [2]. Microscopy is not appropriate for pharyngeal specimens.

Specimen collection.

Men: urethra; rectal and/or oropharyngeal tests as indicated by sexual activity.

Women: cervix (rotate swab in endocervix) and urethra; rectal and oropharyngeal tests when symptomatic at these sites, when a sexual partner has gonorrhoea and when indicated by the sexual history.

- Direct plating of genital samples and use of transport media both give acceptable results [5,6]. (evidence level IV).
- The use of cervical culture as a single screening test for gonorrhoea has a sensitivity of 85%. Infection at the cervix is present in only 90% of women with gonococcal infection [2].
- The sensitivity of a single set of tests from anogenital sites is high (>95%). To confidently exclude infection in patients who have had recent sexual contact with a confirmed case of gonorrhoea, a second set of tests a few days after the first set should be considered if epidemiological treatment with antimicrobial therapy is not given [6]. (evidence level IV).

Management.

General Advice.

- Referral to GU Medicine for management is strongly encouraged.
- Patients should be given a detailed explanation of their condition with particular emphasis on the long-term implications for the health of themselves and their partner(s). This should be reinforced with clear and accurate written information.
- Patients should be advised to avoid unprotected sexual intercourse until they and their partner(s) have completed treatment and follow-up.

Further Investigation.

- Screening for coincident sexually transmitted infection should routinely be performed in patients with or at risk of gonorrhoea. (evidence level III).

Treatment.

Indications for therapy:

- a positive rapid diagnostic test,
- a positive culture for *N. gonorrhoeae*,
- on epidemiological grounds, if a recent sexual partner has confirmed gonococcal infection.

Recommend treatments [3, 7-13] -uncomplicated anogenital infection in adults:

- Ciprofloxacin 500mg orally as a single dose. (grade A recommendation)

or

- Ofloxacin 400mg orally as a single dose. (grade A recommendation).

or

- Ampicillin 2g or 3g plus probenecid* 1g orally as a single dose, where regional prevalence of penicillin resistant *N. gonorrhoeae* <5%. (grade B recommendation).

- Antimicrobial therapy should take account of local patterns of antimicrobial sensitivity to *N. gonorrhoeae*. The chosen regimen should eliminate infection in at least 95% of those presenting in the local community [6].

- Published treatment trials of therapy for gonorrhoea reflect past efficacy to a pathogen which demonstrates a progressive drift in antimicrobial sensitivity. An increasing number of isolates of *N. gonorrhoeae* showing resistance to penicillin, tetracyclines and ciprofloxacin are identified each year in the UK [14-16]. Most resistant isolates are acquired in the UK. Continued surveillance of the antimicrobial susceptibility of *N. gonorrhoeae* is essential. If ciprofloxacin resistance continues to increase and exceeds 5% of isolates, quinolones may longer be suitable as first-line treatment for gonorrhoea.

- Imported infection should be presumed penicillin, tetracycline and possibly quinolone resistant when treated before antimicrobial sensitivity known. Treatment with an alternative regimen using a cephalosporin or spectinomycin* should be considered.

- Recommended treatment regimens do not comprise all effective treatment regimens, but reflect clinical practice in the UK.

<u>Alternative regimens</u>.

- not usually used as first line therapy in UK. These regimens are very effective [8,10-12] and highly active against penicillin and quinolone resistant strains of *N. gonorrhoeae*. (evidence level Ia). They are valuable against imported infection and when special considerations apply.
    - Ceftriaxone 250mg i/m as single dose. (grade A recommendation)

    or
    - Cefotaxime 500mg i/m as single dose. (grade A recommendation)

    or
    - Spectinomycin 2g i/m as single dose*. (grade A recommendation)

<u>Allergy.</u>

Use a recommended treatment from a different class of antimicrobial.

<u>Pregnancy and Breastfeeding</u>.

- Pregnant women should not be treated with quinolone or tetracycline antimicrobials.

  <u>Recommended Regimes</u> [17,18]
    - Ceftriaxone 250mg i/m as single dose. (grade A recommendation)

    or
    - Cefotaxime 500mg i/m as single dose. (grade A recommendation)

    or
    - Ampicillin 2g or 3g plus probenecid* 1g orally as a single dose, where regional prevalence of penicillin resistant *N. gonorrhoeae* <5%. (grade B recommendation).

    or
    - Spectinomycin 2g i/m as single dose*. (grade A recommendation).

<u>Pharyngeal infection.</u>

<u>Recommend treatments</u> [8, 19]

- Ceftriaxone 250mg i/m as single dose (grade B recommendation)

or
- Ciprofloxacin 500mg orally as a single dose.(grade B recommendation)

or
- Ofloxacin 400mg orally as a single dose. (grade B recommendation).

- Single dose treatments using ampicillin or spectinomycin* have a poor efficacy in eradicating gonococcal infection of the pharynx [8]. (evidence level II)

Co-infection with *Chlamydia trachomatis*

Genital infection with *C. trachomatis* commonly accompanies genital gonococcal infection (up to 20% of men and 40% of women with gonorrhoea). Screening for *C. trachomatis* should routinely be performed on adults with gonorrhoea or treatment given to eradicate possible co-infection [3,6,7]. Combining effective antimicrobial therapy against *C. trachomatis* with single dose therapy for gonococcal infection is particularly appropriate when there is doubt that a patient will return for follow up evaluation.

Sexual partners.

Partner notification should be pursued in all patients identified with gonococcal infection, preferably by a trained health adviser in GU Medicine. Action and outcomes should be documented [20]. Male patients with symptomatic urethral infection should notify all partners with whom they had sexual contact within the preceding 2 weeks or their last partner if longer. Patients with infection at other sites or asymptomatic infection should notify all partners within the preceding 3 months. Sexual partners should be treated for gonorrhoea preferably after evaluation for sexually acquired infection.

Follow up.

At least one follow up assessment is recommended to confirm compliance with therapy, resolution of symptoms and signs and partner notification [6] (evidence level IV). A test of cure is usually performed in UK practice. Culture tests should be performed at least 72 hours after completion of antimicrobial therapy [5]. Infection identified after treatment more commonly indicates reinfection rather than treatment failure [4].

Auditable Outcome Measures.

- At least 95% of cases of genital gonorrhoea should be cured by first line therapy [6].
- At least 70% of patients with gonorrhoea should attend for at least one follow-up visit and have tests of cure performed within one month.
- All patients with gonorrhoea should be screened for genital infection with *Chlamydia trachomatis* or receive presumptive treatment for this infection.
- All patients identified with genital gonorrhoea should have at least one documented interview with a health adviser in GU Medicine or other health professional trained in partner notification and their action documented.
- Documented attendance for testing and treatment should be achieved for at least one partner from 65% or more of index cases of gonorrhoea.

*There may be problems with availability of this drug

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Conflict of Interest.
None.

Evidence Base.

Cochrane Library
The Cochrane Library 2000 Issue 4 (Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, and Cochrane Controlled Trials Register) was searched using the textword 'gonorrhoea' and all entries considered.

MEDLINE
A MEDLINE search of published articles in any language for the years 1990-2000 (December) using the subject headings 'gonorrhea' and 'Neisseria gonorrheae'. The sub-headings focused on were: drug therapy, diagnosis, epidemiology, prevention and control, and therapy. All enties in the English language or with abstracts in English were viewed because of the paucity of 'clinical trials' or 'reviews'. Comprehensive reviews of therapy for gonorrhoea that have employed MEDLINE search strategies are published and include trials up to 1993.

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