Treatment of Gonorrhoea
Jackie Sherrard
Objectives

- Understand aims of treatment of gonorrhoea
- Make rational treatment choices understanding role of antibiotic resistance & epidemiological treatment
- Treatment of complicated infection
- Management of coinfections
- Aware of national guideline for management of gonorrhoea

- Case scenarios to develop strategies for treating less straightforward
Treatment indications

- positive rapid diagnostic test
- positive culture
- positive NAAT
  - confirmed
- on epidemiological grounds
Aims of treatment of GC

- eliminate organism from all sites
- eliminate potential for continued transmission
- minimise complications from infection
- circumvent difficulty of ensuring follow up
- treatment for uncomplicated infection should eradicate >95% infections presenting in local community
Treatment of gonorrhoea

- choice depends on
  - efficacy
    - consider the likelihood of resistance
    - *In vitro* sensitivities
    - pharmacokinetics of the antimicrobial
    - anticipated compliance
  - patient acceptability
  - toxicity
- management of coinfections should not compromise or be compromised by the chosen treatment for GC
GC Rx timeline

Year

Total number of cases

Benzyl-penicillin

Sulphonamides

Tetracyclines

Ampicillin

Erythromycin

3rd generation cephalosporins

Fluoroquinolones

NHS

Cefixime or ceftriaxone

Cefixime or ceftriaxone PLUS azithromycin

Ceftriaxone

Ceftriaxone
Resistance and why it is important

- **Public health perspective**
  - Control of GC is dependant on antimicrobials
  - Antimicrobial resistance will compromise control
  - No new alternatives to replace existing Rx

- **Clinician perspective**
  - Limited choice of Rx options
  - Failure to cure GC may lead to increased risk of complications in pt
  - Will lead to increased transmission to sexual partners

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GC Antibiotic Resistance

- In vitro resistance ≠ treatment failure
  - Predictive but other factors involved
- Treatment failures occur with sensitive organisms
  - Site of infection important
  - Patient factors
- May be infected with more than one strain
Recommended treatments

Uncomplicated anogenital infection in adults:
- Ceftriaxone 1g im as a single dose
- For non-anaphylaxis allergy: ceftriaxone as above

If the antimicrobial susceptibility is known at all sites of infection before treatment
- Ciprofloxacin 500 mg oral single dose
Alternatives

- Cefixime 400mg & azithromycin 2g orally as a single dose
  - Only advisable if IM injection contra-indicated or refused by the patient
- Gentamicin 240 mg IM as a single dose & azithromycin 2g
- Spectinomycin 2g IM as a single dose & azithromycin 2g
- Azithromycin 2g as a single dose
- All above have failure rate >10% for pharyngeal GC so dual therapy recommendation
Pregnancy/breastfeeding

- Ceftriaxone 1g im as single dose
- Spectinomycin 2g im as single dose
- Azithromycin 2g as single dose

Do not use quinolones or tetracyclines. Manufacturer advises azithromycin use only if adequate alternatives not available
Complicated infections

**Conjunctivitis:**
- Ceftriaxone 1g single dose

**DGI:**
- Ceftriaxone 1g IM or IV every 24 hours
- Cefotaxime 1g IV every 8 hours
- Ciprofloxacin 500mg IV every 12 hours (if known to be sensitive)
- Spectinomycin 2g IM every 12 hours

Switch 24 hours after symptoms improve to oral regime for total 7 days
- Cefixime 400mg bd
- Ciprofloxacin 500mg bd
- Ofloxacin 400mg bd

Intra-articular antimicrobial installation is unnecessary
Partner management

>14 days after last sex with index case

- Rx **only** recommended following positive tests for GC
- NAATs should be taken from all possible sites of infection at presentation

<14 days since GC exposure

depending on risk
- Screen & treat epidemiologically
- Screen & retest 2 weeks after exposure
Follow up

Patients should be assessed after treatment:
- compliance with treatment
- resolution of symptoms
- adverse reactions
- possible re-infection
- partner notification
- health promotion

BASHH Guidelines 2019
TOC: recommended in all cases

Following patients should be prioritized
- Persisting symptoms or signs
- Pharyngeal infection
- Treatment with anything other than first-line drugs
- Pregnant women

- Culture tests ≥72 hours after completion of Rx
- NAATs @ 2 weeks
- Infection identified post Rx most commonly reinfection rather than treatment failure

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Summary

- Clinicians should be vigilant to the possibility of treatment failures
- Culture should be maintained alongside NAATs to enable susceptibility testing
- Likely that GC will become increasingly difficult to treat as resistance continues to emerge
References

- www.bashh.org
- CEG guideline on the management of gonorrhoea
- PHE
- GRASP Annual report, year 2017 collection

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Case scenarios
19 year old woman

- 18/40 pregnant
- Self-taken VV screen: GC+ve, *Chlamydia* -ve
- Asymptomatic
- She has a history of penicillin anaphylaxis
- How would you manage her?
Case 1

- Culture results
  - GC+ve from cervix and pharynx
  - Resistant to quinolones, sensitive to other antibiotics

- What would you do?

- When she returns she has had SI 2/7 ago with untreated partner.
  - What now?
Case 2

- 48 year old female diagnosed GC on cervical microscopy
- Declined treatment until cultures available as history of anaphylaxis to ceftriaxone and multiple other drug allergies including lidocaine (all confirmed by immunology)
- Confirmed rectal and cervical infection on culture and NAATs
  - penicillin intermediate sensitivity
  - ciprofloxacin resistant
  - ceftriaxone sensitive
- What would you treat her with?
Case 2

- Rx with X
- 2 TOC at 20 days + 40 days
  - both NAATs +ve at cervix, culture negative
- Denies any sex and current (new) partner uninfected
- What do you do now?
Case 2

- Retreated X
- 21 days later still NAATs positive / culture negative
- No sex
- Now what?
Case 2

- Reference lab confirm N.gonorrhoeae on both TOC
- Rx
- NAATS positive at 20 days…
Case 3

26 yr MSM

• Day 1 - urethral gonorrhoea on slide
  ◦ Rx Spectinomycin (pen allergic) + doxycycline

• Day 14 - TOC
  ◦ urethral smear negative
  ◦ cultures from day 1 urethra +ve, pharynx -ve

• Day 16 - results
  ◦ NAATs urethra -ve, pharynx +ve
  ◦ Cultures: quinolone resistant, penicillin sensitive

• What do you do?
Case 3

- Is this likely to be reinfection?
- What other explanations are there?
- What antibiotic do you use?
  - penicillin
  - quinilone
  - other
Case 4

- 41 yr HIV negative MSM
- Asymptomatic (anal insertive + oral sex)
- Attends as gonorrhoea contact
  - Casual partner 1/12 ago (index case)
  - Regular male partner (NAAT-ve. Rx doxy for NSU)
- On microscopy: Urethra GNID +
- What will you treat him with?
Case 4

Seen at 10/7

- Initial GC cultures: +ve urethra and pharynx
  - ceftriaxone MIC 0.01
- Undertake TOC urethra + pharynx

- TOC: Pharynx +ve - what would you do now?
Case 4

- Report - MIC 0.25
- 2\textsuperscript{nd} TOC = Culture +ve again
- What do you do now??