Pharmaceutical issues relating to STI’s

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Objectives

- Treatment options for syphilis, LGV, TV, gonorrhoea
- Adverse events associated with some treatments
- Obtaining supplies of unlicensed drugs
- Administration
Treatment Guidelines

- [www.bashh.org](http://www.bashh.org)
- Evidence based national guidelines
Syphilis treatment

- Early syphilis
  - Benzathine benzylpenicillin 2.4MU IM stat
  - Procaine penicillin 600,000iu IM od for 10 days
  - Azithromycin 2g stat or 500mg od for 10 days
  - Doxycycline 100mg bd for 14 days

- Late syphilis
  - Benzathine benzylpenicillin 2.4MU IM weekly x 3 doses
  - Procaine penicillin 600,000iu IM od for 17 days
  - Doxycycline 100mg bd for 28 days
Neurosyphilis

- Procaine penicillin 1.8-2.4MIU IM od + probenecid 500mg qds for 17 days
- Benzylpenicillin iv 3-4MU every 4 hours for 17 days
- Doxycycline 200mg bd for 28 days

Pregnancy

- Benzathine benzylpenicillin 2.4MU IM stat (1st and 2nd trimester; 2 doses 3rd trimester)
- Ceftriaxone 500mg IM od for 10 days
- Late syphilis treat as for non-pregnant patients

HIV +ve as for HIV-ve
- Why use such high doses of penicillin?

- Why long acting preparations?

- Why longer treatment for late syphilis?

- Why are oral treatment options not used more widely?
Complications of treatment (1)

- Jarisch-Herxheimer reaction
  - Acute febrile reaction usually resolving 24 hours after initiation.
  - Common in early syphilis
  - Role of steroids to prevent neurological or ophthalmic complications
  - 40-60mg prednisolone daily for 3 days starting 24 hours before penicillin
Complications of treatment (2)

- **Procaine reaction**
  - Caused by inadvertent iv injection of procaine penicillin
  - Symptoms – fear of impending death +/- hallucinations and fits (pseudo allergic reaction)
  - Occurs immediately after injection
  - Self limiting within 20 minutes
  - Reassure patient
  - Diazepam if needed
Administration

- Benzathine benzylpenicillin 2.4MU
  - Reconstitute with 8ml water for injection
  - Inject 4ml deep IM into each buttock

- Can use lidocaine 1% instead of WFI to reduce pain on injection

Lidocaine as a diluent for administration of benzathine penicillin

Procaine penicillin 1.2MIU vial

- Reconstitute with 5ml diluent provided
- Gives approximate volume of 1.2MU in 6ml
- To achieve 1.8MIU dose = 9ml
- Inject 4.5ml deep IM into each buttock

www.bashh.org/documents/30/30.pdf
Obtaining supplies

- Benzathine benzylpenicillin
  - 2.4MU vials
  - Aventis “Extencilline®” French product
  - Idis or Mawdsleys

- Procaine penicillin
  - 600,000 or 1,200,000 MIU vials
  - Farmaproina Spanish product
  - Idis or Mawdsleys
Penicillin Allergy

- Desensitisation if possible

- Doses are given every 15 minutes

- Observe for 30 mins after last dose before giving IM dose

- Total time approx. 4 hours

- Must not miss doses to complete treatment course

- For info 1000iu = 0.625mg penicillin V
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www.cdc.gov/std/Treatment/2006/penicillin-allergy.htm

Case 1

- 38 year old gay man
- TPHA neg 9/03
- Self referral MMC 4/04
- 12 weeks rash, fevers, malaise
- 8 weeks deafness/ balance problems/vertigo
- GP referral to HTD/ENT
- Necrotic ulceration
- Biopsy – non-specific vasculitis
- Sensineural deafness

?diagnosis
FTA+TPHA+/RPR1:64

HIV Negative

Secondary syphilis with meningovascular involvement.

?treatment options
- Procaine penicillin 1.8 MIU IM od + probenecid 500mg QDS for 17 days

On 4th day of 17 day course. During procaine injection. Panic, impending doom “worst experience of my life”. Lasted 15 minutes.

- ?diagnosis
- **Procaine reaction (Hoigne’s syndrome)**
  Inadvertent intravenous injection of procaine.

- **Completed therapy with doxycycline 200mg BD**
  for 4 weeks
LGV treatment

- **1\textsuperscript{st} choice:** Doxycycline 100mg bd for 3 weeks (or minocycline 300mg stat then 200mg bd)

- **2\textsuperscript{nd} choice:** Erythromycin 500mg qds for 3 weeks

- Alternative: Azithromycin 1g weekly x 3 doses
- Pregnancy – erythromycin
- Less data available for azithromycin
- Contacts: doxycycline 100mg bd for 1 week or azithromycin 1g stat
- Test of cure
- Limited data about cure rate for any treatments.
- Doxycycline more widely used
- Seems to have higher cure rate than azithromycin
Trichomonas vaginalis

**Treatment**
- Metronidazole 2g stat or 400mg bd for 5-7 days
- Cure rate higher with single dose
- Alternative – tinidazole 2g stat
- N.B. Alcohol warning
- Need to treat sexual partner also
- **Pregnancy**
  - Lower dose metronidazole

- **Breast feeding**
  - Avoid high dose as affects taste of milk

- **Most respond to 1 and usually 2 courses at most**
Alternative treatment options

- Higher doses of metronidazole
  - 400mg tds + 1g od pr for 7 days
  Or
  - 2g od for 3-5 days

- Tinidazole 2g bd for 2 weeks

- Consider alteration of bacterial flora by giving amoxicillin or erythromycin followed by metronidazole again
Case 2

- 25 year old female with vaginal discharge

- Diagnosed with TV

- Previous reaction to metronidazole when treated for BV
  - Ataxia and dizziness with significant loss of co-ordination
  - Couldn’t walk in a straight line or write.
  - Also affected speech

- Treatment options?
- 6% nonoxynol 9 pessaries on for 2 weeks then weekly for up to 7 months - ?discontinued

- Acetarsol pessaries 250mg bd for 2 weeks

- Paromomycin pessaries 250mg od or bd for 2 weeks

- Clotrimazole pessaries 2x100mg od for 1 week
Acetarsol pessaries

- Unlicensed product
- Available from Martindale
- 250mg suppositories (used as pessaries)
- Arsenic based
- Not used widely due to potential toxicity

- Side effects – local vaginal irritation
Paromomycin “pessaries”

- Extemp preparation made containing 250mg paromomycin suspended in Ung Merck
- Not absorbed so needs to be given topically
- May cause local irritation

Coelho DD, Metronidazole resistant trichomoniasis successfully treated with paromomycin Genitourin Med 1997;73:397-398
Clotrimazole pessaries

- Limited efficacy, but may benefit in some patients
- Combine with tinidazole for maximal effect
Other previously tried options

- Povidone iodine pessaries – discontinued product
- Zinc sulphate douches with oral/topical metronidazole
- Lactobacillus vaccination???
- Alteration of vaginal pH in combination with systemic option
Gonorrhoea

Treatment Options, uncomplicated infection

- Ceftriaxone 250mg IM stat

OR

- Cefixime 400mg po stat (not pharyngeal infection)

OR

- Spectinomycin 2g IM stat (not pharyngeal infection)

- Pregnancy as above
Ceftriaxone
- Reconstitute with lidocaine 1% 1ml if wanted

Spectinomycin
- Unlicensed drug
- Currently manufacturing problem
- Available from Idis or Mawdsleys
- Reconstitute with 3.2ml WFI provided to give 5ml final volume
Alternative treatment options

- Only where sensitivities are known or if local resistance <5%
- Ciprofloxacin 500mg po stat
- Amoxycillin 2g or 3g + 1g probenecid po stat
- Ofloxacin 400mg po stat
## Anti-bacterial sensitivity changes (%)

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Questions??