

## Antimicrobial Resistance in *N. gonorrhoeae* – A Case Study

### PATIENT HISTORY

Miranda is a 20 year old student who will be returning home in the next few days for a summer job. She became sexually involved with a new partner about a month ago. She has no family physician.

She reports her LNMP being 2 weeks ago, abnormal vaginal discharge, pain during intercourse, and that these symptoms appeared 5-7 days ago.



How would you diagnose and screen Miranda?

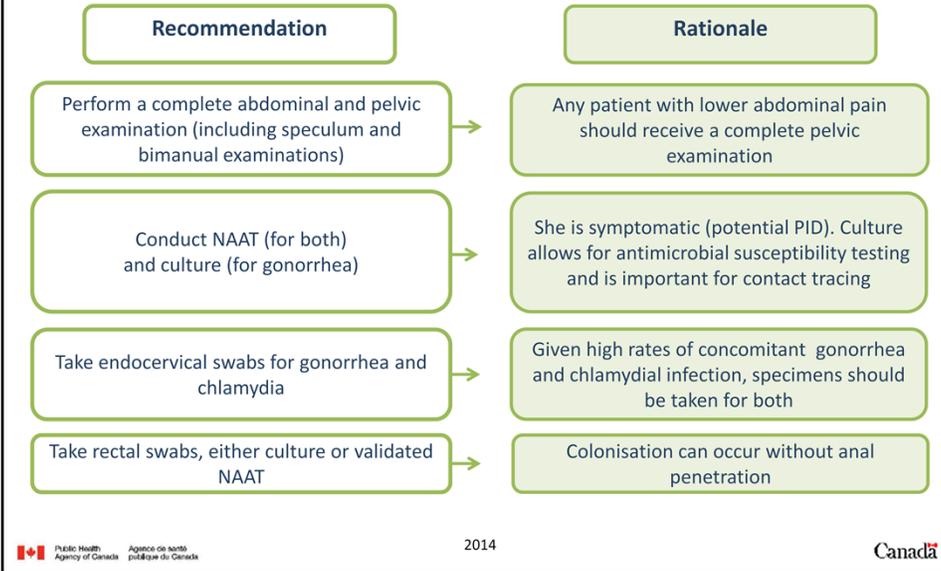
How would you treat Miranda?

Are there any additional steps you would take?

- Your patient, Miranda, is a 20 year old student who will be returning home in the next few days for a summer job. She became sexually involved with a new partner about a month ago.
- She has no family physician.
- She reports the following symptoms, which appeared about 5 to 7 days ago.
  - Abnormal vaginal discharge
  - Pain during intercourse
- The date of her last known menstrual period was 2 weeks ago
- QUESTIONS:
  - How would you diagnose and screen Miranda?
  - How would you treat Miranda?
  - Are there any additional steps that you would take?

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### DIAGNOSIS

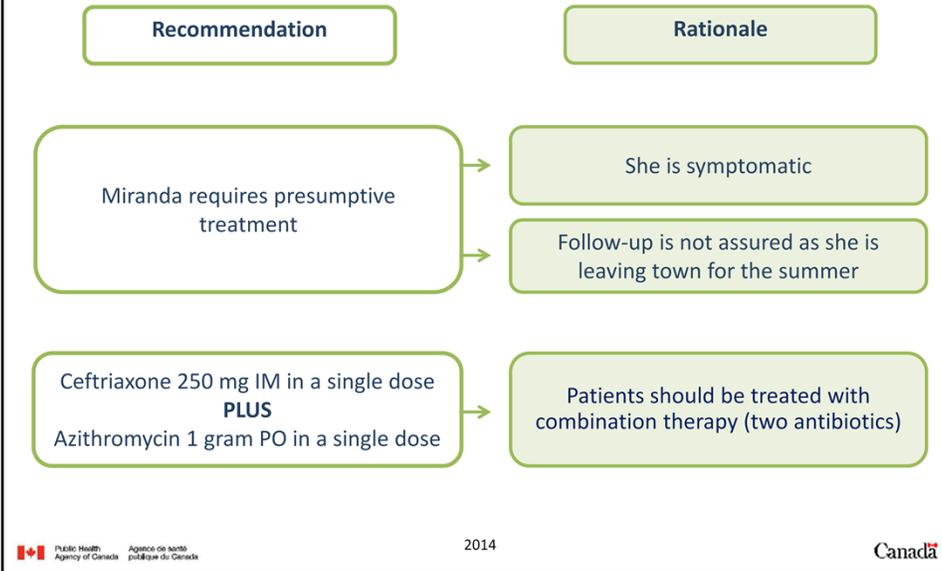


In order to diagnose Miranda, the following steps are recommended:

- A complete abdominal and pelvic examination should be performed.
  - The rationale is that any patient with lower abdominal pain should receive a complete pelvic examination.
- Both a NAAT and a culture should be conducted. NAATs should be done to test for both gonorrhea and chlamydia, and the culture should be done for gonorrhea.
  - The rationale is that symptomatic patients should be tested with culture, particularly if the patient is suspected to have pelvic inflammatory disease. Cultures allow for antimicrobial susceptibility testing. They are also important for contact tracing.
- An endocervical swab should be taken to test for gonorrhea and chlamydia.
  - The rationale is that gonorrhea and chlamydia are often concomitant infections.
- A rectal swab for either culture or validated NAAT should be taken.
  - The rationale is that colonisation can occur without anal penetration.

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### TREATMENT



It is recommended that Miranda be treated as follows:

- She be treated presumptively for two reasons. She is symptomatic, and she is leaving town for the summer making follow-up uncertain.
  - Note that women are often asymptomatic.
- Miranda should be treated with ceftriaxone (250mg IM in a single dose) AND azithromycin (1g PO in a single dose).
  - Combination therapy should be used for the treatment of gonorrhoea.

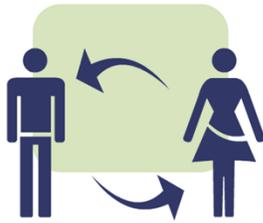
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### COUNSELLING

Counsel Miranda on prevention

Infection with one STI increases the chance of others being present

HIV transmission and acquisition is enhanced in people with gonococcal infections



- Any partner within 60 days prior to symptom onset should be:
  - Notified
  - Tested
  - Empirically treated regardless of clinical findings and without waiting for test results.

- While Miranda is in your office, you should counsel her on prevention.
  - She should be informed that infection with one sexually transmitted infection increases the chance of other infections.
  - Patients with gonorrhea are more likely to transmit and acquire HIV; HIV testing is recommended.
  - Untreated gonorrhea in women can result in upper genital tract infection which may result in pelvic inflammatory disease, infertility, or ectopic pregnancy.
  - Gonorrhea is efficiently transmitted from males to females via vaginal intercourse, rectal intercourse, and fellatio.
  - Gonorrhea can be transmitted from females to males via vaginal intercourse and less efficiently by cunnilingus.
  - Patients with gonorrhea are more likely to transmit and acquire HIV.
  - Miranda should abstain from intercourse until therapy is completed and until her and her sex partners no longer have symptoms.
  - Latex condoms, when used consistently and correctly, can reduce the risk of transmission of gonorrhea.
- Discuss human papillomavirus vaccine Miranda as per the recommendations outlined in the National Advisory Committee on Immunization *Update on Human Papillomavirus Vaccines*

- Partner notification should be conducted for any sexual partners that Miranda has had within the 60 days prior to her symptom onset. All of her partners should be notified, tested and empirically treated (given that Miranda does have symptoms).

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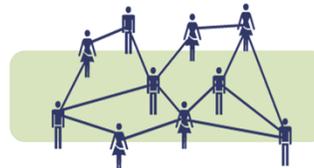
### REPORTING

Strongly encourage Miranda to return to repeat her test

Report the case to local public health authorities

Treatment failure should also be reported

Repeat screening for individuals with gonococcal infection is recommended 6 months post-treatment



- Miranda should be strongly encouraged to return to a clinic to have herself retested (at the latest in 3 weeks) in order to ensure that the antibiotics were effective.
- She should also be retested in 6 months.
- As a practitioner, you must notify the local public health authorities of the case.
  - If you become aware that Miranda's treatment was not effective, this treatment failure should also be reported.