BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS
EDUCATION & TRAINING

Module 8:
Case Studies

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Case 1:
Accidental Exposure

Case 1

- 32 year old female surgical resident
- She received an accidental needlestick injury while suturing a patient during abdominal surgery
- She was wearing gloves, but the needle went through them and she received a deep puncture wound in her finger which bled
- She is otherwise healthy, but is trying to get pregnant

Case 1

Source patient information:

- 45 year old MSM
- Last HIV test was negative 6 months ago
- Presented with abdominal pain and new diagnosis of colon cancer

Case 1: Question

What would you recommend?

1. Immediate initiation of PEP and to complete 28 days of treatment
2. Advise to wait to initiate PEP until after the source patient consents to have an HIV test and the test result is available
3. Inmediate initiation of PEP, then review the need to complete 28 days of treatment once the HIV result from the source patient is available
4. Advise against PEP because she could be pregnant

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Answer

Case 1: Question

What would you recommend?

1. Immediate initiation of PEP and to complete 28 days of treatment
2. Advise to wait to initiate PEP until after the source patient consents to have an HIV test and the test result is available
3. Inmediate initiation of PEP, then review the need to complete 28 days of treatment once the HIV result from the source patient is available
4. Advise against PEP because she could be pregnant

Post exposure prophylaxis should be initiated as soon as possible, ideally within 2 hours of the exposure.
Starter kits are available in all emergency rooms in BC. It is advised that the each case is reviewed with the BC-CfE pharmacist and/or physican after the initiation of treatment and then a decision can be made to continue or discontinue the treatment.

Case 1: Follow-up

- The source patient agreed to do an HIV test, and 3 days later the test is negative.
- He reveals that he had high risk sexual contacts until a week prior to the incident.
- He also received PEP twice in the last 2 years.
- The resident has some minor drug tolerability issues (nausea, headaches). Her pregnancy test is negative.

Case 1: Question

What would you recommend now?

1. She can stop PEP, since the source patient tested HIV negative
2. She should complete 28 days of PEP, since the source patient is very high risk
3. She can review the need to continue PEP in 7 days, once a second test is done on the source patient
4. She should stop PEP due to tolerability issues

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Answer

Case 1: Question

What would you recommend now?

1. She can stop PEP, since the source patient tested HIV negative
2. She should complete 28 days of PEP, since the source patient is very high risk
3. She can review the need to continue PEP in 7 days, once a second test is done on the source patient
4. She should stop PEP due to tolerability issues

Since the source patient has a high risk for acquiring HIV it would be advisable that the patient completes the full PEP treatment.
The source patient could be in the seronversion window period and consequently be very infectious. An HIV test will only become positive after 7 to 14 days of exposure.
Alternatively, she could review her need to complete PEP if the patient agrees to retest within a week.

Case 1: Conclusion

- The resident completed 28 days of PEP
- The source patient's HIV test was positive 14 days after the incident
  - He was referred for HIV care
- Follow up HIV test in the resident was negative at 6 and 12 weeks after the end of PEP

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Case 2:
HIV Chemoprophylaxis in a Non-Accidental Setting

Case 2

- 22 year old MSM
- 24 hours ago he had receptive anal sex with a male friend of unknown HIV status
- They used a condom but it broke and he is unsure if there was ejaculation
- He had an HIV test that was negative 6 months ago

Case 2: Question

What would you recommend?

1. To do an HIV test and initiate PEP
2. To do an HIV test and not initiate PEP
3. Ask the male partner to do an HIV test and then decide if he needs to start PEP
4. To do an HIV test, initiate PEP, and then review in 7 days after his male partner tests for HIV

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Answer

Case 2: Question

What would you recommend?

1. To do an HIV test and initiate PEP
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4. To do an HIV test, initiate PEP, and then review in 7 days after his male partner tests for HIV

Patients that have unprotected receptive anal intercourse with individuals who are at high risk for HIV or of unknown status are advised to initate PEP, ideally as soon as possible and within 72 hours of the event.
If the source partner is identified and available for HIV testing that is recommended, and the PEP treatment can be reevaluated once that result is available.

Case 2

- The patient initiates PEP and has good tolerability
- He is unable to contact his male friend to do an HIV test
- He completes 28 days of PEP
- A follow up HIV test 3 weeks later is negative

Case 2

- The patient continues to have high risk sexual encounters. He has now received 2 PEP treatments
- He had syphilis twice in the last 2 years
- His HIRI score is >10
- He would like to consider pre-exposure prophylaxis (PrEP)
- Otherwise, he is healthy and is not receiving other medications

Case 2 : Question

What would you advise?

1. To counsel him regarding safer sex, and advise him to use condoms to prevent HIV infection
2. Provide a prescription for PrEP (emtricitabine/tenofovir DF) and ask that he repeats an HIV test 1 week prior to PrEP initiation
3. Not to initiate PrEP, since his HIRI score is low
4. 1 & 2
5. 1 & 3

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Answer

Case 2 : Question

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3. Not to initiate PrEP, since his HIRI score is low
4. 1 & 2
5. 1 & 3

This patient is at a high risk for acquiring HIV infection, and PrEP would be recommended according to present guidelines. Clinicians who are not experienced in the management of HIV preventive treatments can connect with the BC-CfE to request consultations or further support to help manage these cases.

Case 2

- Patient initiates daily emtricitabine/tenofovir DF
- His baseline blood work shows a creatinine of 95 µmol/L and eGFR of 65 mL/min
- He has follow-up blood work 1 month later. HIV test is negative, renal function remains stable.
- 3 months later, his HIV test is negative, creatinine is 115 µmol/L, and eGFR is 55 mL/min
- He is going to the gym very often and takes ibuprofen regularly

Case 2: Question

What would you recommend now?

1. Stop PrEP immediately and reassess in 1 month
2. Stop PrEP only after >48 hours of last high risk exposure, and reassess in 4 weeks
3. Continue with PrEP and reassess in 3 months
4. Advise to stop ibuprofen and increase fluid intake
5. 2 and 4

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Answer

Case 2: Question

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3. Continue with PrEP and reassess in 3 months
4. Advise to stop ibuprofen and increase fluid intake
5. 2 and 4

Once other causes for renal impairment have been ruled out, one has to consider that tenofovir DF could be the cause of his abnormal renal function.
Data shows that PrEP can only be discontinued safely (in terms of its HIV preventive effect) after 48 hours or even one month after the last high risk encounter.
It is also advisable to reduce the risk of renal toxicity due to use of NSAIDs.

Case 2: Follow-up

- Patient discontinues PrEP, and sees you 4 weeks later
- His renal function improved; creatinine is now 98 µmol/L and eGFR is 65 mL/min. HIV test is negative
- He would like to reinitiate PrEP

Case 2: Question

What would you do now?

1. Review his case with an HIV experienced physician
2. Challenge him again with emtricitabine/tenofovir DF
3. Counsel him regarding safer sex, since he can't receive PrEP again

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Answer

Case 2: Question

What would you do now?

1. Review his case with an HIV experienced physician
2. Challenge him again with emtricitabine/tenofovir DF
3. Counsel him regarding safer sex, since he can't receive PrEP again

Given that he developed signs of renal toxicity on TDF it is advisable to review this case with an HIV experienced physician or a nephrologist.

Emtricitabine/tenofovir DF is the only antiretroviral regimen that is approved by Health Canada as PrEP for prevention of HIV.

If his renal function improves while off TDF and NSAIDs, one can consider challenging with TDF and monitor his renal function closely.

Case 2: Conclusion

- He was reviewed by an HIV experienced physician and PrEP was reinitiated with close monitoring
- His HIV test was repeated 1 week prior to reinitiation of PrEP and remained negative
- His renal function remains stable after 3 months on PrEP

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Case 3:
HIV Pre-Exposure Prophylaxis

Case 3

- 32 year old male
- Previously healthy
- Sees his GP for routine visit Feb 2016
  - Asks about PrEP as a friend has just started it in Seattle

Case 3

What additional history might help you to further evaluate his HIV risk?

1. Casual sexual partners only
2. Approximately 10 sexual partners in last 6 months
3. Known HIV+ partners
4. Receptive anal sex
5. Condoms <10% of time
6. Uses crystal meth "on occasion"

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Answer

Case 3: Question

What additional history might help you to further evaluate his HIV risk?

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This patient has a HIRI score of 32. He has a high risk for acquiring HIV.
HIRI Score >10 had sensitivity of 84% for incident HIV infection (i.e. it was associated with a doubling of HIV incidence) with a specificity of 45%. (Smith DK, et al. J Acquir Immune Defic Syndr. 2012;60(4):421-7.)

Case 3

- His GP is not familiar with PrEP, and advised him to consider lifestyle changes to decrease his chances of acquiring HIV infection

Case 3: Question

- Develops rectal gonorrhea 3 months later
- Seen at Health Initiative for Men (HIM)
  - Asks again about PrEP
  - Advised to discuss with GP

Does this STI change your concerns about his HIV risk?

A sexually transmitted infection (STI) diagnosis is associated with a nearly 5-fold increase in the incidence of HIV (Lachowsky et. al. CAHR Conference 2016).

Case 3

- Seen again at HIM
- Undergoes routine STI testing
- Asks about PrEP
  - Offered referral

- 24 hours later begins to feel unwell
  - Fevers/chills
  - Sore throat/swallowing difficulties
  - Headache

Case 3: Question

What would you advise?

1. Do a throat swab and initiate Rx with amoxicillin
2. Likely he is having acute HIV infection; do a point of care HIV test
3. Likely he is having acute HIV infection; do a pooled HIV NAAT test
4. Reassure and reassess in 2 weeks

NAAT, nucleic acid amplification test

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Answer

Case 3

What would you advise?

1. Do a throat swab and initiate Rx with amoxicillin
2. Likely he is having acute HIV infection; do a point of care HIV test
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NAAT, nucleic acid amplification test

In patients presenting with “flu-like syndrome” who are at a high risk for HIV infection, acute HIV seroconversion illness should be ruled out.

Point of care testing may not be positive during seroconversion, and a negative test does not rule out early infection. The pooled NAAT test can become positive within 7 to 14 days of acquiring HIV.

Case 3: Conclusion

- Pooled HIV NAAT positive results 7 days later indicate acute seroconversion
- Referred on an urgent basis to a physician with expertise in treating HIV

NAAT, nucleic acid amplification test

Patients with symptomatic acute HIV infection should initiate ART as soon as possible. This will result in a rapid decrease of the viral burden and the size of the latent HIV reservoir in the patient and reduce the risk of viral transmission.

Source: Gunthard HF, et al. Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults: 2016 Recommendations of the International Antiviral Society-USA Panel. JAMA : the journal of the American Medical Association. 2016;316(2):191-210.

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End of Module 8