Communication Case 07

Indeterminate Western Blot

Use this case as practice! The pull-out booklet contains the candidate's information.

Information for the Candidate

Patient Details: Mr C. Yolo, 42 years old

Your Role: Medicine Ward SHO

Information: Mr Yolo was admitted 4 days ago. He presented with a 2-week history of fever, rash, and sore throat after returning from vacation.

Your consultant has ordered several tests including a HIV test*. The laboratory has called to inform you that the HIV test is 'indeterminate'.

Your task is to speak to Mr Yolo about this result.

*Your laboratory uses a fourth-generation HIV assay, which is a combination test including the HIV antibody and p24 antigen. If this is positive, a confirmatory western blot is performed.

Planning (From the Stem)

1. **What do I need to assess?/What information do I need to gather?**
   - How Mr Yolo has been clinically.
   - What is Mr Yolo's exposure history – in particular, explore his travel history, sexual history, occupational exposures, intravenous drug use, blood transfusions.
2. **What do I need to convey?**
   - That Mr Yolo may have HIV infection.
   - Clinical management plan – Mr Yolo may have early HIV infection from very recent exposure. He will require further testing with either a repeat HIV test in 6 weeks or a HIV viral load (which can be performed immediately).
3. **What is the safety issue here?**
   - Mr Yolo should be counselled of precautions to avoid HIV transmission.
   - Suicide risk assessment if patient reacts poorly to the news.
4. **What are the ethics and communications principle here?**
   - Breaking bad news.

Patient's Brief

You are a 42-year-old insurance agent. In the last three weeks, you have been having fever, rash, and sore throat that did not seem to go away even after you saw multiple GPs. You came to the hospital 4 days ago and were admitted, and are at present still febrile and miserable. You feel frustrated that your doctors have not found out what is wrong after putting you through many blood tests and scans. You will open the conversation with: "Doctor, I want to be discharged. I'm sick and tired and nothing has been done for me these four days." However, you will be rapidly pacified once the candidate acknowledges your frustration.

You had just returned from Bangkok, Thailand approximately a week before the onset of fever. This was a fully sponsored incentive trip you earned for exceeding last year's sales targets. You went on this trip with several other insurance agents from your firm, with whom you did several 'boy things' such as visiting girly bars and having unprotected oral and vaginal intercourse with female commercial sex workers. You have never received any blood transfusions, undergone any surgery, or used any intravenous drugs. You are married with two children of primary school age. Apart from this episode and one or two casual relationships in your undergraduate days, you have only had sexual intercourse with your spouse. You have never had any other sexually transmitted diseases.

If informed that you may have HIV, you will react with surprise. You did not think much about this encounter as "everyone else did it too"; while you are aware of HIV, you do not think that it will happen to you. You will then seek to clarify whether you indeed have, or do not have, HIV — the information that you 'may' have HIV or that the test is 'indeterminate' makes you feel unsettled and confused. You are anxious and jittery. You will also seek to find out what you need to do next; if told that you need to repeat a blood test later, you will ask if there is any test that can be done now to confirm the diagnosis.

You have some specific questions for the doctor at this consultation:

- Doctor, how can this happen to me? It was just once and I have been faithful to my wife all along.
- I am confused. Do I have or not have HIV?
- Is there any way I can find out, right now, whether I have HIV?
- Can I be treated? Will I die?

Case Discussion

Apart from the standard breaking bad news and HIV counselling, this station requires some knowledge of HIV testing.

You should be able to identify from the stem that Mr Yolo likely has early HIV infection. Acute HIV infection presents with an infectious mononucleosis-like syndrome with fever, lymphadenopathy, sore throat, rash, myalgia, diarrhoea, and weight

loss. While none of these symptoms are specific for HIV, suspicion is increased if symptoms are prolonged.

HIV testing begins with an initial screen using either a third-generation (ELISA) or fourth-generation combination assay (IgM and IgG antibody + p24 antigen). Positive screens require confirmatory testing with Western Blot[3]. The Western Blot tests for antibodies to HIV-1 viral proteins and may return negative or indeterminate in early HIV infection. Therefore, samples with a positive initial screening test but a negative or indeterminate confirmatory test are reported as 'indeterminate' — this may signify early HIV infection *and must not be misinterpreted as a negative HIV test*. Note also that the fourth-generation assay takes 15–20 days to turn positive following HIV infection; testing may be falsely negative if performed too early.

You will begin the station on the back foot after Mr Yolo informs you that he is frustrated and wants to be discharged. Acknowledge his frustration, apologise for the delay, and tell him that you have some results that you would like to discuss with him. Before proceeding any further, find out more about Mr Yolo. Specifically, explore his presenting symptoms and travel history. Ask if he has any suspicion what the diagnosis could be and if there was anything unusual on his recent trip.

Take a sexual history. Do not be squeamish — appear confident, professional, and non-judgemental. A good strategy is to begin with the least invasive questions. Pertinent points needed to stratify the risk of HIV exposure are outlined in Table C5.5.

Practice makes perfect: Taking a sexual history

The sexual history is often poorly taken. Many candidates are squeamish and trained surrogates pick this up easily. It is important to not just identify 'positive sexual history' but to get a good sense of exactly how risky the patient's sexual behaviour is. Pair up with a friend and practice taking sexual histories from each other. Include scenarios such as positive commercial sex worker contact, homosexual/transsexual contact, and so on.

In PACES, pay attention to stereotyped occupational histories such as long-distance truck drivers or travelling businessmen; while these may be unfair stereotypes, it is also often the question setter's hint that you should consider taking the sexual history.

[3] Some labs, particularly in the United States, perform a HIV-1/HIV-2 differentiation immunoassay as a confirmatory test in lieu of the Western Blot.

Table C5.5. A comprehensive sexual history template.

From the least to the most intrusive. Not every point may be relevant in every case.

No.	Item	Suggested words
1.	Opening statement	"There is a list of questions we usually ask everyone with prolonged fever. This includes a sexual history which is important to know how to get you better."
2.	Potential HIV exposure other than sexual intercourse	Ask about any blood transfusions, intravenous drug use, or surgeries in Thailand. This is both relevant and a good introduction to the more invasive questions.
3.	Marital status	"Are you married"? • If yes, patient is presumed to be sexually active. • If no, follow up with: "Are you sexually active?"
4.	Prior pregnancies (in ladies)	"Have you ever had a pregnancy, miscarriage, or abortion?"
5.	Sexual partners	"How many sexual partners have you had?" • If many, "How many have you had in the past month?"
6.	Regular vs. casual vs. paid partners	"Are these partners people you know well?" • If no, "Has there ever been paid encounters?"
7.	Use of barrier protection	"How often do you use a condom?" Note: Avoid using the word 'protection' as some take that to mean 'contraceptive pill'.
8.	Sexual practices	"Do you have sex with males, females, or both?" • Follow up with: "Do you engage in vaginal sex, anal sex, oral sex, or all of the above?" • For anal intercourse, find out if the patient is the insertive (male) or receptive (female) partner. Please do not ask: "Do you have 'normal' sex?"
9.	Previous sexually transmitted disease	"Have you ever had any sexually transmitted diseases?" "Have you previously been tested for HIV?"

Break bad news about the HIV diagnosis in the usual way (see Table C5.1), remembering to include pauses and giving Mr Yolo adequate space. Address his concern ("Will I die?") head on, for example: "It is true that one can die from HIV especially if it is untreated. But treatment is available and it is highly effective. People who are diagnosed early, treated early, and take their medications can live as long as everyone else."

You will need to explain that the HIV test can be 'indeterminate' in early infection and that a repeat confirmatory test is necessary. In such cases, we can repeat the HIV test in 6 weeks. However, given a high clinical suspicion for acute retroviral infection in Mr Yolo, it is ideal to perform a HIV RNA viral load which is typically high in early

infection. This will allow prompt confirmation of the diagnosis and onward referral to an infectious disease physician for counselling and initiation of anti-retroviral therapy.

Finally, counsel on the risk of infection transmission, abstinence from sexual intercourse (including with his spouse), blood donation, and sharing of IV drug needles. If taking the exam in Singapore, you should also inform the patient that while he has yet to have a positive HIV test, Singapore law requires that a person "who has reason to believe that he has or has been exposed to a significant risk of contracting HIV Infection" not engage in sexual activity unless the partner is informed on the risk of HIV transmission and accepts the risk (Infectious Diseases Act 1976).