

Questionnaire with correct answers and explanations

Questionnaire Sections		Number of Questions
1	When to start	6
2	Resistance	4
3	PREP	3
4	Management of coinfections	7
5	Co-morbidities and QoL	5
6	Educational need	1
7	Demographics	5
Tot		31

Correct answers are reported in bold.

Below each question a **comment** describes the correct answer.

1. When to start

Question 1.1

Which statement below best describes your routine approach to initiation of ART in diagnosed HIV-1 patients?

Alternative answers 1.1

1. I analyse patients' CD4+ T-cell counts and initiate ART if counts fall below 500/mm³.
2. I analyse patients' CD4+ T-cell counts and initiate ART if counts fall below 350/mm³.
3. I don't analyse CD4+ T-cell counts before or after initiation of ART.
4. I analyse HIV RNA load results and initiate ART if above 50,000 copies/mL.
5. **I initiate ART in all diagnosed HIV-1 patients regardless of CD4+ T-cell count.**

Comment: All international guidelines for initiation of antiretroviral therapy (ART) recommend initiation at or during the first time period after diagnosis of HIV infection since the clinical benefits have been shown in scientific well-performed studies. It is of course of relevance to consider individual factors of the persons living with HIV, personalized medicine, which could to some extent influence the decision. Also the value of immediate initiation of ART can be discussed in people living with HIV (PLWH) who are or could be "elite controllers".

Question 1.2

To what extent does patient readiness influence the decision to initiate ART?

Alternative answers 1.2

1. Patient readiness does not influence the decision because ART must be started immediately upon diagnosis.
2. Patient readiness is the sole consideration, regardless of lab results.
3. Assessment of readiness is only essential in patients with clinical symptoms.
- 6. Assessment of readiness is essential but ART should be started if clinically indicated.**
4. Assessment of readiness is important but must be done by a conversational therapist.

Comment: The persons' readiness for ART is essential to assess since it is an important determinant of the adherence to therapy. A low readiness increases significantly the risk of low adherence and the risk of treatment failure. An assessment of readiness can lead to identification of factors which could be of high relevance for the risk of treatment failure and therefore are important target of supportive interventions. However if the patient has or is at risk for clinical complications ART should be started and the aspect of readiness can be dealt with thereafter.

Question 1.3

When can immediate (same day) initiation of ART be considered?

Alternative answers 1.3

1. Immediate (same day) initiation of ART can never be considered before the diagnosis is confirmed.
- 7. Immediate (same day) initiation of ART can be considered if primary HIV-1 infection is suspected.**
2. Immediate (same day) initiation of ART can be considered only if the relevant drugs are available at the clinic.
3. Immediate (same day) initiation of ART can be considered when a patient's partner demands it.
4. Immediate (same day) initiation of ART can only be considered in pregnant women.

Comment: It is generally believed that immediate initiation of ART during primary HIV infection can preserve the immune system much more efficiently and also decrease the HIV reservoirs. These advantages may be of long-term benefit for the patient with regard to clinical long-term consequences of HIV, although such clinical benefits have not been firmly scientifically described.

Question 1.4

How should HIV-1 infection be confirmed before initiation of ART?

Alternative answers 1.4

1. Always with HIV screening using serologic testing followed up by confirmatory Western Blot analysis, but not virologic testing (detection of viral RNA).
2. Always with HIV screening via serologic testing followed up by confirmatory Western Blot analysis and virologic testing (detection of viral RNA).
- 8. Confirmation is not always necessary before initiation of ART.**
3. Confirmation is only necessary if primary HIV infection is suspected.

4. A confirmatory HIV virologic test to detect viral RNA should always be performed before initiation of ART.

Comment: There are several situations where initiation of ART can be considered despite that the infection is not yet confirmed. Such examples are people living with primary HIV infection and pregnant women close the labour. Also in subpopulations who are “hard to reach” and where there is a significant risk that they will not turn up at follow-up visits if ART is not initiated, immediate initiation can be the most effective approach.

Question 1.5

Should patients with risk of loss-to-follow-up be treated at diagnosis?

Alternative answers 1.5

1. No, patients with risk of loss-to-follow-up should never be treated at diagnosis because initiation is pointless if the patient fails to return.
2. Patients with risk of loss-to-follow-up should only be treated at diagnosis if there is no ongoing intravenous drug use.
- 9. Yes, initiation of treatment at diagnosis can be considered for any patient with a risk of loss-to-follow-up.**
3. Patients with risk of loss-to-follow-up should only be treated at diagnosis if the patient is likely to be imprisoned, ensuring ART can be given continuously.
4. Patients with risk of loss-to-follow-up should only be treated at diagnosis if the patient is under 20 years of age.

Comment: As for question 1.4, subpopulations who are “hard to reach” and where there is a significant risk that they will not turn up at follow-up visits if ART is not initiated, immediate initiation can be the most effective approach to retain at least a significant proportion of these persons in care.

Question 1.6

Should untreated patients with undetectable HIV-1 RNA load be treated?

Alternative answers 1.6

1. No, untreated patients with undetectable HIV-1 RNA load should never be treated because treatment is pointless if efficacy can't be monitored.
2. Yes, untreated patients with undetectable HIV-1 RNA load should be treated but only if the patient has an HIV-negative partner.
- 10. It's not always necessary to treat patients with high CD4+ T-cell counts and undetectable HIV-1 RNA.**
3. No, untreated patients with undetectable HIV-1 RNA load should not be treated because genotypic resistance testing of plasma virus is necessary before initiating ART.
4. Viral load assay should be repeated immediately and, if negative, no treatment is necessary.

Comment: There are no studies published which have targeted patient-populations with high CD4+ T-cell counts and undetectable HIV-1 RNA. The value of ART versus the cost of e.g. side effects in this patient population is therefore not known.

2. Resistance

Question 2.1

Is a genotypic resistance test (GRT) necessary before initiation of ART?

Alternative answers 2.1

1. Yes, a genotypic resistance test (GRT) is necessary because pre-treatment HIV drug resistance is prevalent.
2. Yes, a genotypic resistance test (GRT) is necessary but only if the prevalence of pre-treatment HIV drug resistance is more than 20%.
3. No, ART can be started without a GRT since the GRT results don't matter.
- 4. No, ART can be started without a GRT but it should still be done since the GRT results could matter.**
5. Genotypic resistance test (GRT) is necessary only in patients with CD4+ T-cell counts below 200/mm³ and late testers.

Comment: The rate of pretreatment drug resistance (PDR) varies in different geographical regions but is significant in most countries where studies have been done. However most newly diagnosed persons do not exhibit, presently, PDR. Therefore if convenient or if other reasons suggest to start ART before GRT results are obtained the risk of starting ART is low. GRT is still recommended thereafter since it is possible and recommended to switch therapy if PDR is identified in a plasma sample obtained at baseline.

Question 2.2

Do you ever request HIV-1 drug resistance testing in patients with virological failure?

Alternative answers 2.2

1. Never, there is a large number of drug regimens available to construct an effective alternative.
2. No, as there is no value in HIV-1 drug resistance testing in patients failing a first-line regimen since a standard second-line regimen will be effective.
- 3. Always, in order to guide subsequent treatment decisions.**
4. Only in patients failing second- or next-line therapy.

Comment: Several studies have reported a clinical value of performing resistance testing at failure and use the results as one of several parameters in the choice of the following ART regimen.

Question 2.3

Considering your centre's routine provider, how long do resistance testing results typically take?
(NB: There is no correct or wrong answer here)

Alternative answers 2.3

1. Data not available.
2. More than 4 weeks.
3. 2-4 weeks.
4. Less than 2 weeks.

Comment: There are no firm recommendations on how fast a result from resistance testing should be obtained. However in PLWH failing ART the longer time it takes before a switch to another regimen is considered, the risk increases of further accumulation of resistance mutations and thereby the relevance of the results of the resistance test may decrease somewhat.

Question 2.4

Considering your centre's routine provider, how are resistance testing results reported?
(NB: There is no correct or wrong answer here)

Alternative answers 2.4

1. Results are reported as a list of mutations.
2. Results are an interpretation by an expert system specifying the activity of each drug.
3. Results are included in a prediction tool suggesting activity of drug regimens.
4. Results are analysed in consultation with an expert virologist.

3. PrEP

Question 3.1

For which categories of patients do you prescribe pre-exposure prophylaxis (PrEP)?

Alternative answers 3.1

1. PrEP is not prescribed as the efficacy is not proven.
2. PrEP is only prescribed to HIV-negative men who have sex with men (MSM) and transgender people with casual partners.
3. **PrEP is prescribed to HIV-negative men who have sex with men (MSM), to transgender people with casual partners and to those with HIV-positive partners who are not on ART.**
4. PrEP is only prescribed to those with HIV-positive partners, regardless of whether their partners are on ART or not.
5. PrEP is prescribed to all patients who ask for it as there may not be full disclosure of sexual behaviour.

Comment: The value of PrEP has clearly been shown for men who have sex with men (MSM) and transgender people with casual partners. It has also been clearly shown that efficient ART with undetectable viremia eliminated the risk of transmission from PLWH. Therefore "treatment as prevention" is recommended. However in certain situations where the HIV positive person is not treated or in whom treatment has just been initiated and undetectable viremia has not yet been reached, PrEP should be considered to the HIV negative partner

Question 3.2

What laboratory tests should be conducted before initiation and during PrEP?

Alternative answers 3.2

1. PrEP should not be prescribed as the efficacy is not proven.
2. No laboratory tests are necessary.
3. A fourth-generation HIV test only before initiation is enough.

4. A fourth-generation HIV test, HBV serology status and kidney function, only before initiation but not during PrEP are enough.
5. **A fourth-generation HIV test, HBV serology status and kidney function before initiation, then repeated every 3 months during PrEP.**

Comment: It is important that HIV infection is ruled out in a patient who shall receive PrEP since there is a very high risk that the double therapy given in PrEP may result in development of HIV drug resistance if the person is already infected by HIV. HBV serology should be done since antiretroviral drugs used in PrEP also have effect on HBV. If HBV unknowingly is treated with PrEP and the treatment is terminated there is a risk for a rebound of HBC with potential severe clinical consequences. Kidney function should be tested since one key component in the presently used PrEP combination, tenofovir, may at a low percentage cause kidney damage.

The test should be repeated to confirm that the person has not become infected with HIV or HBV during the observation period and that no damage to the kidney has occurred.

Question 3.3

What should be done in the event of early clinical signs of HIV seroconversion during PrEP?

Alternative answers 3.3

1. PrEP should not be prescribed as the efficacy is not proven.
2. Immediately stop PrEP and ask the patient to use condoms in future.
3. **Add a third agent to the PrEP regimen to initiate early treatment of HIV infection.**
4. Continue PrEP until the HIV infection is confirmed.

Comment: The immediate addition of a third agent is important in such a situation in order to avoid or diminish a development of HIV drug resistance

4. Management of co-infections

Question 4.1

When should testing for hepatitis C virus (HCV) be conducted in HIV-infected patients?

Alternative answers 4.1

1. Only when patients are intravenous drug users.
2. Only when patients are men who have sex with men and multiple partners.
3. At diagnosis among all patients.
4. **At diagnosis among all patients and then annually if HCV-negative at diagnosis.**
5. Never, as the focus should be on HIV, which is a much more dangerous infection.

Comment: HCV can today be efficiently treated and a diagnosis and subsequent treatment for HCV will be beneficial for the individual patient and also for the society since further transmission of HCV is inhibited. The HCV testing at diagnosis and repeatedly is especially recommended in HIV positive persons since this population is at higher risk of becoming infected by HCV.

Question 4.2

What tests should be conducted for hepatitis C virus (HCV) in HIV-infected patients?

Alternative answers 4.2

1. Screening with an anti-HCV antibody test.
2. Screening with an anti-HCV antibody test and a confirmatory antibody test, e.g. Western blot.
3. Screening with an anti-HCV antibody test and, if positive, an HCV RNA test.
4. **Screening with an anti-HCV antibody test and, if positive, an HCV RNA test. But HCV RNA testing should be conducted if the antibody test is negative in people engaging in high-risk activities (such as ongoing intravenous drug use or 'chem sex')**

Comment: A certain proportion of persons who have antibodies to HCV has cured their HCV infection by themselves and having no HCV RNA left in the body. Therefore no treatment is needed. In people engaging in high-risk activities there is a significant risk that they can become infected by HCV but since the seroconversion period, that is the time before antibodies appear in the blood, is relatively long during acute HCV infection, such infection may be missed if HCV RNA testing is not done.

Question 4.3

Which patients with HIV and HCV infections should be treated for HCV?

Alternative answers 4.3

1. Only patients who are not taking ART.
2. Only patients who are taking ART.
3. Only patients with CD4+ T-cell counts below 350/mm³.
4. Only patients with stage 3 or 4 liver fibrosis.
5. **All patients with HIV/HCV infection.**

Comment: Treatment of HCV is today easy, safe and very efficient including HCV co-infected PLWH. Treatment of all patients is therefore highly recommended.

Question 4.4

Which HCV treatment should be given to patients with HIV/HCV infection?

Alternative answers 4.4

1. Interferon-based therapy because it is more effective than other options in HIV/HCV-infected patients.
2. **Interferon-free, direct-acting agents.**
3. Induction and maintenance therapy with direct-acting agents.
4. Specific HCV treatment is not necessary as most HIV drugs also have an effect on HCV.
5. Specific HCV treatment is not necessary as immune response improves during ART.

Comment: The direct acting agents are very effective with few side effects and very little risk for resistance development. There is today no reason to give interferon. No HIV drug has effect on HCV infection.

Question 4.5

Which HIV-infected patients with an HCV co-infection should be screened for hepatocellular carcinoma (HCC)?

Alternative answers 4.5

1. Only untreated HIV-infected patients with HCV co-infection since there is no increased risk in treated patients.
2. All HIV-infected patients with an HCV co-infection.
3. All HIV-infected patients with an HCV co-infection when clinical symptoms are present.
4. **All HCV co-infected patients, even if the HCV infection is cured.**

Comment: Present available scientific data suggest that there is an increased risk of HCC also in patients who have been cured for HCV. There are several ongoing prospective scientific studies which studying this important issue further.

Question 4.6

Which patients with HIV and HBV infections should be treated for HBV?

Alternative answers 4.6

1. Only patients with CD4+ T-cell counts below 350/mm³.
2. Only patients with signs of liver cirrhosis.
3. **All patients with HIV and HBV infections.**
4. None, as the focus should be on HIV, which is a much more dangerous infection.

Comment: HBV can today be treated with monotherapy using modern nucleoside analogues with great clinical value for the patients. Since some drugs have effect on both HIV and HBV it is important to test for HBV before initiation of ART and choose a drug regimen which has effect on both HIV and HBV.

Question 4.7

Which HIV-infected patients with HBV co-infections should be screened for hepatocellular carcinoma (HCC)?

Alternative answers 4.7

1. Only cirrhotic patients, regardless of whether ART is given or not.
2. Only cirrhotic patients on ART.
3. **All cirrhotic and non-cirrhotic patients with HCC risk factors, such as family history, ethnicity and hepatitis delta virus infection.**
4. Only patients with ongoing ART failure.

Comment: The co-factors for developing HCC in PLWH with HBV co-infection are the same as for mono-infected HBV patients. Thus PLWH with HBV co-infection should be screened for HCC according to the same procedure as for mono-infected HBV patients.

5. Co-morbidities

Question 5.1

Considering your centre, by whom are non-serious non-infectious co-morbidities (e.g. diabetes, hypertension, cardiovascular disorders, renal disease) managed?

(NB: The reply here is very much dependent on local organization/resources. There is no correct or wrong answer but the best practice is highlighted)

Alternative answers 5.1

1. By the HIV treatment specialist who has also become a specialist in managing co-morbidities.
2. By the HIV treatment specialist in consultation with other specialists.
- 3. By the primary care physician in consultation with other specialists.**
4. By a multidisciplinary team who regularly meet and exchange information.

Comment: How the care of non-serious non-infectious co-morbidities in PLWH is managed is depending on the local organization. It is not necessary that HIV physicians are managing these co-morbidities. From several points of view primary care physicians have an important role, especially in the aging HIV population, if the local organization allows that. However it is of importance that there are well-defined interactive channels between HIV physicians and primary care physicians (and other specialists) in the benefit of the general health care of HIV positive persons.

Question 5.2

Which of the statements below best describes your approach to helping patients with smoking or alcohol cessation?

(NB: The reply here is very much dependent on local organization/resources. There is no correct or wrong answer but the best practice is highlighted)

Alternative answers 5.2

1. It's not my responsibility and time constraints make it unfeasible.
- 2. I refer patients to cessation programs.**
3. I give patients standard recommendations.
4. I suggest that patients follow cessation programs.

Comment: It is of great importance to support HIV positive persons in cessation of smoking and alcohol. Scientific studies from Europe have shown that smoking in a well-treated HIV population is the major contributor to premature death. Also excessive alcohol use influences the outcome on a population level. Any measure which can support the patient in cessation of smoking and alcohol overconsumption is valuable. The most efficient approach has been shown to be involvement in cessation programs.

Question 5.3

Do you screen patients for HPV-related cancers?

Alternative answers 5.3

1. No.
2. Yes, for cervical cancer only.

3. Yes, for cervical and anal cancer.

4. Yes, for cervical, anal and oral cancer.

Comment: Several scientific studies have very clearly shown a significantly higher risk of development of cervical and anal cancer, respectively, in HIV positive populations with an associated increased risk of cancer development. Presently there is no established generally accepted approach to screen for oral cancer.

Question 5.4

Do you track Quality of Life or other patient-reported outcome measures?

(NB: The reply here is very much dependent on local organization/resources. There is no correct or wrong answer but the best practice is highlighted)

Alternative answers 5.4

1. No.
2. Yes, through a specialist/psychologist.
3. Yes, through self-reporting using questionnaires.
- 4. Yes, through self-reporting using questionnaires and/or mobile apps.**
5. Yes, but only for specific studies.

Comment: The bio-medicine approaches of WHO/UNAIDS in the 90-90-90 goal has been challenged by the addition of a fourth 90 – quality of life (QoL). The ambitions of improving the QoL of HIV positive persons is now entering HIV clinical care. Data suggest that improved QoL including decreased stigmatisation are in addition to psychological well-being also important for the outcome of ART and thereby the long-term outcome of HIV clinical care.

Question 5.5

Do you test/monitor your patients neurocognitive performance?

Alternative answers 5.5

1. No.
2. Yes, through a specialist/psychologist.
3. Yes, through self-reporting using questionnaires.
- 4. Yes, through self-reporting using questionnaires and/or mobile apps.**
5. Yes, but only for specific studies.

Comment: It is still not known whether, and if so to which extent, HIV itself in well-treated patients causes an increased risk of decrease in neurocognitive performance. However in view of this inconsistent knowledge, and the aging HIV population as well as the importance of identifying decreased capability of individual patients to follow the schedule of the ART regimen, efficient means of self-reporting is warranted.

6. Educational need

Question 6.1

Considering your centre what, in your opinion, is the most important educational need in relation to HIV treatment and management?

(NB: There is no correct or wrong answer here)

Alternative answers 6.1

1. New HIV-1 treatment regimens.
2. Laboratory monitoring of HIV-1 infection status.
3. HIV-1 drug resistance.
4. Co-infections, e.g. HBV, HCV, TB.
5. Non-infectious co-morbidities.

7. Demographics

(NB: There are no correct or wrong answers here)