HIV diagnosis in adults

General

HIV screening can be performed in all clinical laboratories. To allow an earlier diagnosis, HIV screening should be performed by fourth generation tests (combined antibody/antigen detection) or third generation tests (antibody detection) in combination with a separate antigen detection test. Both 3rd and 4th generation tests detect antibodies against HIV-1 of groups M and O, as well as HIV-2. Their sensitivity and specificity are excellent (99,2 – 99,8%). However, their positive predictive value is only 50% due to the low prevalence of HIV infection in Belgium.
Any sample with a reactive or equivocal result should be send to one of the Belgian AIDS reference laboratories (ARL) for confirmation or exclusion of HIV infection, as well as for typing of infection (HIV-1, HIV-2, co-HIV-1/2). Western blot, immunoblot or lateral flow immunochromatographic tests are used in the Belgian ARL, with the latter two tests most commonly performed. The result of this confirmatory assay is interpreted using well-defined criteria.
During seroconversion/primary infection the profile of the confirmatory assay can still be incomplete. For this reason, in primary infection, additional detection of p24 antigen and/or plasma viral RNA is particularly useful. It is advised to follow the evolution of antibodies on subsequent samples.
In conclusion, in the Belgian ARL, immuno-, confirmatory and/or p24 antigen and/or plasma viral RNA assays are performed to confirm or exclude an HIV infection and to specify if it is an infection with HIV-1 and/or HIV-2.

Guidelines

- Each sample with a reactive or equivocal HIV screening result must be send to one of the ARL.
- After initial result of the ARL, a subsequent sample has to be send, as follow-up, in the following cases:
    - when an HIV infection is confirmed, since sampling/labeling errors and contaminations are possible.
    - after an acute infection , to follow-up the evolution of antibodies.
    - when the result is inconclusive (in these cases HIV DNA PCR on EDTA blood can be performed)
- When an HIV infection is confirmed, it is advised to refer the patient to an AIDS Reference Center for treatment and follow-up of the infection.
- In case of high risk contact, a diagnostic test can be performed from 3 weeks after the contact. But as the degree of certitude is not maximal 3 weeks after the contact, it is advisable to retest in case of negativity 6 to 8 weeks after the contact, or in case of ARV prophylaxis 3 months after cessation of treatment (PEP). A control after 6 months can be considered for reasons of liability.
- If a primary infection is suspected based on clinical signs (flu-like syndrome, …), it is recommended to perform the test immediately, without taking these intervals in account and to determine the plasma viral RNA (on EDTA blood). It is very important to communicate relevant information (such as timing of suspect contact, presence of clinical symptoms,…) to the ARL.

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