

Closing the Brief Case: A Reactive HIV Rapid Antibody Test in a Pregnant Woman

(See page 826 in this issue [[doi:10.1128/JCM.02647-15](https://doi.org/10.1128/JCM.02647-15)] for case presentation and discussion.)

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ANSWERS TO SELF-ASSESSMENT QUESTIONS

- After a positive HIV rapid antibody test, which of the following tests should be ordered next?
 - HIV-1 Western blot assay.
 - HIV-1 nucleic acid amplification test.
 - HIV antigen/antibody immunoassay.
 - HIV-1/2 differentiation assay.

Answer: c. According to the 2014 CDC recommendations for the diagnostic testing of HIV, patients with positive rapid antibody assay results should be tested by the fourth-generation algorithm in its entirety. Therefore, the most appropriate next test is the HIV antigen/antibody immunoassay.

- In a low-risk patient, which of the following results require confirmatory testing with a qualitative molecular assay for HIV-1 as the next step?
 - HIV antigen/antibody immunoassay positive and HIV-1/2 differentiation assay negative.
 - HIV antigen/antibody immunoassay positive and HIV-1/2 differentiation assay positive.
 - HIV rapid antibody test positive and HIV antigen/antibody immunoassay negative.
 - HIV rapid antibody test positive and HIV antigen/antibody immunoassay positive.

Answer: a. The fourth-generation testing algorithm recommends confirmatory testing using a qualitative molecular technique for all patients with positive antigen/antibody immunoassay positive and negative HIV-1/2 differentiation assays. This is to detect possible cases of acute HIV-1.

- Which of the following is not an advantage of using the HIV-1/2 differentiation assay for serologic confirmation as opposed to Western blot assay?

- An earlier time to positivity following infection.
- The ability to distinguish HIV-1 antibodies from HIV-2 antibodies.
- The ability to rule out HIV infection based on a negative result.
- A faster turnaround time.

Answer: c. HIV-1/2 differentiation has an earlier time to positivity, faster turnaround time, and lower cost than HIV-1 Western blotting. Negative results still require confirmation with a molecular test to rule out acute HIV.

TAKE-HOME POINTS

- Compared to third-generation antibody assays, fourth-generation antigen/antibody assays are more sensitive, more specific, and capable of earlier detection of HIV infection.
- Testing for HIV by the fourth-generation algorithm entails screening with an antigen/antibody assay and confirmatory testing with an HIV-1/2 differentiation assay.
- Patients with a reactive antigen/antibody assay but nonreactive HIV-1/2 differentiation assay should have molecular testing performed to distinguish acute HIV infection from a false-positive screen result.
- Rapid HIV antibody tests offer a quick turnaround time, but reactive results should be confirmed using the fourth-generation algorithm.

Citation Yarbrough ML, Anderson NW. 2016. Closing the Brief Case: A reactive HIV rapid antibody test in a pregnant woman. *J Clin Microbiol* 54:1176.

[doi:10.1128/JCM.02648-15](https://doi.org/10.1128/JCM.02648-15).

Editor: A. J. McAdam

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