Virology for second year MD students – School of Medicine – the University of Jordan

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Activity for the 3rd lecture (in-campus)

Please read each statement carefully and indicate whether it is True or False:

1. Since virus culture is the gold standard approach for diagnosis of viral infections, it remains the primary diagnostic method for rapid clinical identification of acute viral infections. **False**
2. The appearance of IgM before IgG provides the basis for differentiating between acute and chronic stages of viral infection. **True**
3. In a patient tested within 48 hours of symptoms of acute virus infection, serologic diagnosis is the most valuable diagnostic tool. **False**
4. The basis of serologic diagnosis of virus infections is similar to a specific key for a specific lock where each virus elicits a unique antibody that can be traced back to its specific antigenic stimulus; hence, helping to reach an accurate diagnosis of that specific virus infection. **True**
5. Cross-reactivity between viral antigens increases the specificity of serologic diagnosis. **False**
6. In the diagnosis of virus infections, antigen detection depends on identifying viral proteins directly in patient samples, which helps to reach diagnosis before antibody production begins. **True**
7. A genital swab positive for antigen X from virus Y means that it is highly likely that the virus Y genome is present in the host genital cells. **True**
8. A nasopharyngeal swab positive for antigen X from virus Y means that it is highly likely that the virus Y proteins are present in the host nasopharyngeal cells. **True**
9. Antigen detection and serologic diagnosis both assess host immune responses rather than direct viral components. **False**

10. In the diagnosis of virus infections, molecular detection is used to amplify any DNA sequence present in the sample, regardless of its virus origin. **False**
11. Histopathologic diagnosis of virus infections relies on direct or indirect viral genome detection in the cells or tissues infected by the virus. **True**
12. The presence of typical clinical signs and symptoms can help in the diagnosis of virus infections without laboratory or radiologic confirmation. **True**
13. In general, molecular and antigen detections methods help for early diagnosis of virus infections while serology helps for retrospective confirmation of these infections. **True**
14. If PCR and antigen detection are both negative for a virus X while IgM for the same virus is positive, the most likely explanation is that the virus X was cleared before sampling, but the immune system still reflects recent exposure. **True**
15. Negativity of PCR, antigens, and antibodies for virus Z definitively rules out virus Z infection as a cause of an underlying illness. **False**
16. A patient with positive PCR, positive antigen, and rising IgM to virus M but absent IgG to virus M is most likely in the decline of virus M replication. **False**
17. Lung biopsy from a patient recovering from viral pneumonia caused by virus A showed typical cytopathic inclusions. PCR and antigen tests for virus A were negative. The morphologic changes seen in histopathology likely represent residual structural damage rather than active virus A replication. **True**
18. A healthcare worker with IgG positivity for a respiratory virus Y presents with new respiratory symptoms. Laboratory tests showed PCR positive, IgM negative, IgG positive for virus Y. The most likely diagnosis is a reinfection rather than primary infection. **True**

19. A cell culture grew virus I, but both antigen and PCR tests for virus I were negative. The only explanation of this discrepancy is contamination by virus I in the laboratory. **False**
20. A patient was tested by PCR for a DNA virus and the result was positive, but repeated testing after two days by PCR yielded a negative result. The explanation for this discrepancy is that the first result was a false positive because viruses cannot be cleared from the body very quickly. **False**

Good luck!