

Co-Infection with Hepatitis C Virus and Human T Lymphocyte Virus

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Most individuals infected with human T lymphocyte virus (HTLV) type 1 or 2 will not develop the disease related to this virus, remaining asymptomatic for the rest of their lives. This fact has important implications for prospective counseling and evaluation of this population. Individuals infected with this virus, once identified, should be submitted to anamnesis and complete physical examination (in order to identify early manifestations of the disease and probable forms of acquiring the infection) and should be periodically evaluated every 6-12 months. It is recommended that injection drug users be tested for other pathogens common to this population, such as the hepatitis B virus, the hepatitis C virus (HCV), HIV, etc. It is recommended that partners of sexually active individuals be tested for HTLV. Children of women infected with HTLV-1 should be tested.

Follow-up evaluations should include the following periodic laboratory tests (every 6-12 months): complete blood workups with platelet counts; parasitological stool examination (testing for *Strongyloides*); urine and urine sediment test (urinary infection). Although the proviral load of HTLV-1 is still under evaluation and has yet to be validated, some studies recommend annual quantification.

Special Situations

- In asymptomatic cases that present evidence of HTLV-related systemic disease, such as dermatological alterations, hyperreflexia, clone or Babinski sign:
- Serum calcium level, immunophenotyping of T lymphocytes (CD3, CD4, CD8, histocompatibility leukocyte antigen-DR, CD38 and CD56); diffuse histiocytic lymphoma, creatine phosphokinase, folate and vitamin B12 levels; free thyroxine 4 and thyroid stimulating hormone; and study of somatosensitive evoked potentials.

Healthy individuals infected with HTLV-1 should be counseled regarding the transmission mechanisms of the infection and be reassured that the probability of developing the disease in the future is low. If necessary, they should be referred for specialized psychological follow-up evaluation.

Currently, there is no indication – based on scientific evidence – that any certain type of specific anti-HTLV-1 pharmacological intervention plays a role in the prophylaxis of HTLV-related diseases. Therefore, there is no indication for the use of immunomodulatory, immunosuppressant or antiretroviral drugs in asymptomatic individuals infected with HTLV (National Ministry of Health, guide of clinical management of the HTLV-infected patient, 2004).

HTLV/HCV Co-Infection

Infection with HCV is frequently detected in HTLV-infected individuals and vice versa, as seen in other commonly transmitted pathogens.

Co-infection with HTLV-2 and HCV in patients who are drug users has been reported, principally in cohorts in the northern hemisphere [1]. A study carried out in Paraná, Brazil revealed a strong association (OR=22.60; 95% CI: 10.35-49.35) between these two pathogens, probably reflecting shared transmission forms [2].

The prevalence of co-infection also seems to increase in individuals infected with HIV in Brazil. Segurado et al. [3] demonstrated that HCV infection was an independent risk factor for HTLV infection (adjusted OR=6.43, p=0.02).

Interactions Between HCV and HTLV in Co-Infected Individuals: Potential Clinical Implications

There are few studies on the effects of co-infection with HCV and HTLV. Hisada et al. [4] demonstrated that the co-infection with HTLV is associated with greater viral load of HCV.

In a study conducted in Japan, HCV/HTLV-1 co-infected individuals were found to be at a higher risk of incidental liver disease (RR = 5.9), hepatocarcinoma and death (RR = 21.9), as well as for developing diabetes [5]. In addition, co-infected individuals have been shown to present a higher frequency of anergy to purified protein derivative, although with no statistical significance, suggesting a differentiated immunomodulatory effect in this population [6].

A recent study conducted in the state of Bahia, Brazil revealed a high prevalence of HTLV/HCV co-infection. Although it did not evaluate the clinical impact, it showed the relevance of this association.

In practical terms, there is no established recommendation for the management of HCV/HTLV co-infection. Nevertheless, the analysis what evidence there is suggests that this association can result in significant modifications in the natural history of HCV, increasing the viral load of HCV, as well as increasing the morbidity and mortality associated with this infection. Therefore, the co-infected patient requires special attention regarding the clinical evolution of hepatitis C and the markers of the infection.

In addition to monitoring the parameters related to HTLV infection, especially the neurologic alterations secondary to the infection, we should carefully evaluate the stage of the liver disease, and routinely evaluate the viral load of HCV. Attention should be given to potential alterations of glucose metabolism, since there seems to be an increased tendency toward these problems in the co-infected individual. For co-infected patients, routine evaluations of fasting glycemia, as well as glucose tolerance tests, could be necessary.

References

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