Summary

Objective: Thyroid autoimmunity is a common side effect of interferon-α (IFN-α) treatment for chronic hepatitis C. There are currently no reliable parameters to predict the occurrence of thyroid dysfunctions in patients undergoing IFN-α therapy. The CXC chemokine ligand 10 (CXCL10) is a chemokine known to play a role in both thyroid autoimmune disease and hepatitis C virus (HCV) hepatitis.

Design: Aim of study was to measure CXCL10 serum levels in HCV patients treated with IFN-α in relation to the occurrence of thyroid dysfunctions. Serum CXCL10 levels were assayed in 25 HCV patients (proven to be negative for thyroid antibodies) before and during IFN-α therapy (2, 4, an 6 months) and in 50 healthy controls. HCV patients were selected retrospectively according to the occurrence of IFN-α-induced thyroid dysfunction and were assigned to two groups. Group I included 15 patients who did not develop thyroid antibody positivity or dysfunction; group II included 10 patients who showed the appearance of serum thyroid antibodies, followed by clinically overt thyroid dysfunction.

Results: Patients with HCV, regardless of the development of thyroid dysfunction, had significantly higher CXCL10 levels than controls (262 ± 123 versus 80 ± 34 pg/ml; P <0.001). Pretreatment mean serum CXCL10 levels were significantly higher in Group I versus Group II (309 ± 131 versus 191 ± 69 pg/ml; P <0.005). Groups I and II showed different rates of favourable response to IFN-α treatment (33% and 90%, respectively).

Conclusion: The results suggest that measuring serum CXCL10 before IFN-α treatment may be helpful for identifying those patients with higher risk to develop thyroid dysfunction, and who require careful thyroid surveillance throughout treatment.

Comment

Interferon-α (IFN-α) has become the standard therapy for chronic hepatitis C. Thyroid autoimmunity has been widely reported as a side effect of treatment with IFN-α, with a frequency ranging between 3% and 45%. In the previous article summarized and commented upon in the present series (see Thyroid Update 2007-III-9), the same group of investigators showed the interest of measuring CXCL10 in hyperthyroid patients receiving treatment with radioiodine. We therefore coupled these articles, the present one dealing specifically with CXCL10...
determination in patients with hepatitis C and IFN-α therapy. Details on chemokines and specifically CXCL10 can be found in the other commentary. The results of this study confirm that serum CXCL10 levels are significantly increased in patients with hepatitis C. Moreover, the development of overt thyroid dysfunction is associated with lower serum levels of CXCL10 both before and during treatment with IFN-α. Since the present study was (unfortunately) only retrospective, it remains to be seen whether this additional information could be used as a predictor of potential thyroid dysfunction in such patients.

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See Figure below

Figure 1 Pretreatment and on-treatment serum levels of CXCL10 in HCV patients treated with IFN-α in relation to the occurrence of or less thyroid dysfunction in the course of therapy. Data are expressed as median plus 25th and 75th percentiles in boxes, and 5th and 95th percentiles as whiskers. *Indicates statistical significance (Mann–Whitney U test; P < 0.05).