Interferon Induced Thyroid Dysfunction: A Case Series

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Introduction

Interferon use for the treatment of chronic hepatitis infection, is associated with the side effect of thyroid dysfunction. This is frequent and can be severe, particularly if not recognised.

Methods

We performed a retrospective analysis of cases of interferon related thyroid dysfunction referred to our tertiary endocrinology centre. 423 patients were treated with interferon for chronic hepatitis and 14 cases of thyroid dysfunction were identified over the last eight years. An analysis was carried out of demographic features, presentation, treatment and outcomes.

Results

Demographics: The mean age was 42.5 years (range 26-52). 57% were female and 43% male. 21% were smokers and 14% had positive family history of thyroid disease.
Clinical Presentation: 57% of patients developed hypothyroidism, 21% developed thyroiditis, 14% hyperthyroidism and 1 patient developed sick euthyroidism. The mean speed of onset of thyroid dysfunction was 12.3 weeks (range 7.7 weeks to 21 weeks).
Symptoms: The most prevalent symptom in patients diagnosed with hyperthyroidism or thyroiditis was sweating (100% of patients), followed by palpitations (80%), increased stool frequency and weight loss (60%). 40% of patients were asymptomatic.
Hypothyroid patients presented with weight gain (63%), fatigue (50%) and cold intolerance/ poor concentration (25%).
Signs: Interestingly, 86% of cases had no abnormal physical signs. There were no patients with eye signs.
Investigations: TPO antibody tests were found to be positive in 36% of patients (mean 620 IU/ml).
Treatment: 64% of patients required treatment with levothyroxine and 29% were managed conservatively. 1 patient each required treatment with radioactive iodine and carbimazole.

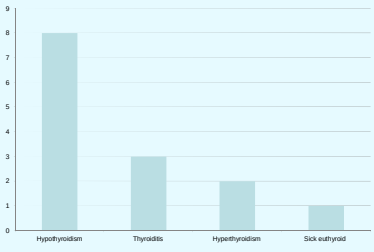
Conclusions

This series demonstrates the breadth of thyroid dysfunction associated with interferon treatment. A female preponderance and a lack of thyroid eye signs was seen, as in previous studies. The mean speed of onset is 12.3 weeks which supports current recommendations to test thyroid function at the start of treatment and every three months. However, the shortest speed of onset was 7.7 weeks, suggesting that earlier testing is advisable if clinical suspicion is high.

Table 1: Patient Demographics, Clinical Features and Treatment

Age	42.5 years mean (range 26-52)
Male Sex	43%
Smokers	21%
Family History	14%
Positive TPO antibodies	36%
Mean speed of onset	12.3 weeks
Chronic Hepatitis C, of which:-	11 patients
Genotype 1a/1b	5 patients
Genotype 3/3a	5 patients
Genotype 4	1 patients
Chronic Hepatitis B, of which:-	2 patients
Genotype A	1 patient
Genotype D	1 patient
Treatment	
Conservative	4
Levothyroxine	9
Radioactive Iodine Treatment	1
Carbimazole	1

Chart 1: Final Diagnosis of Patients



Key Messages

- Thyroid dysfunction is a common side effect of interferon treatment
- Patients commenced on interferon should have baseline thyroid function tests (TFTs) and be warned of the risks of thyroid dysfunction.
- Repeat TFTs should be performed every 3 months unless clinical suspicion warrants earlier testing.

References

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There are no conflicts of interest and funding was not applied for.