Interferon and Thyroid Dysfunction

Approximately15% of individuals treated with INF-α will develop abnormal thyroid function and this may be either thyrotoxicosis or hypothyroidism. Interferon may cause a destructive thyroiditis or precipitate the presentation of Graves' disease or autoimmune hypothyroidism. Patients with pre-existing thyroid antibodies are at increased risk. Thyroiditis usually occurs in the first few weeks of therapy and the typical pattern is of transient hyperthyroidism followed by hypothyroidism.

<u>Suggested monitoring</u>

- TFTs and anti-thyroid peroxidase antibodies should be checked prior to commencement of Interferon therapy.
- If TFTs are abnormal then these results should be discussed with an endocrinologist before Interferon is started.
- TFTs should be checked monthly while on Interferon.

<u>Investigation and Management of Thyrotoxicosis</u>

- Most commonly this will be due to a destructive thyroiditis, in which case it should be self-limiting over a few weeks or months. It is not mandatory to stop the Interferon, but it is likely that cessation of therapy will speed resolution of the thyrotoxicosis. If Interferon therapy is to be continued, the case should be discussed with an Endocrinologist.

- If symptomatic, commence Propranolol (20-80 mg t.d.s) and continue until T4 normal. Inderal LA is a once daily preparation of Propranolol and is very useful – it is available in 80mg and 160 mg preparations and is administered once daily.
- Arrange a thyroid scintigram with Nuclear Medicine.
- Measure TRAb titres (Thyroid Receptor Antibodies – brown tube to Clinical Biochemistry).
- If thyroiditis confirmed, monitor TFTs every 4 weeks, watching out for development of hypothyroidism.
- Neck pain can be treated with NSAIDS.
- Severe episodes of thyroiditis (i.e. significant neck pain and/or thyrotoxicosis) may require additional therapy with Prednisolone (40mg daily) until T4 is normal.
- If the thyroid scintigram shows evidence of Graves' disease or nodular disease, refer to Endocrinology

<u>Management of Hypothyroidism</u>

- Hypothyroidism detected *de novo* may be due to autoimmune disease or, more commonly, is the tail-end of an episode of thyroiditis in which the hyperthyroid phase was not clinically evident.
- If TSH >10 and/or T4 <9, commence Levothyroxine 100 ug/daily. If elderly or have pre-existing cardiac disease, discuss with Endocrinologist as a lower starting dose should be used.
- If TSH 5-10 and T4 >9, treatment may not be necessary, unless symptomatic
- Recheck TFTs after 4 weeks and adjust T4 dose according to TSH

- It is usually not necessary to discontinue the Interferon when hypothyroidism is detected *de novo*.
- Hypothyroidism may not be permanent. After 4-6 months of Levothyroxine therapy, providing the Interferon has previously been discontinued or completed, it is always worth reducing the dose to 50 mcg. If TSH is in the normal range 4 weeks later, discontinue the Levothyroxine and recheck TFTs after another 4 weeks. An elevated TSH at any stage indicates an on-going requirement for Levothyroxine. The risk of permanent hypothyroidism will be higher in those with positive anti-thyroid peroxidase antibodies.