

Thyroid deficiency refractory to treatment: Is this a case for DOT?

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Introduction

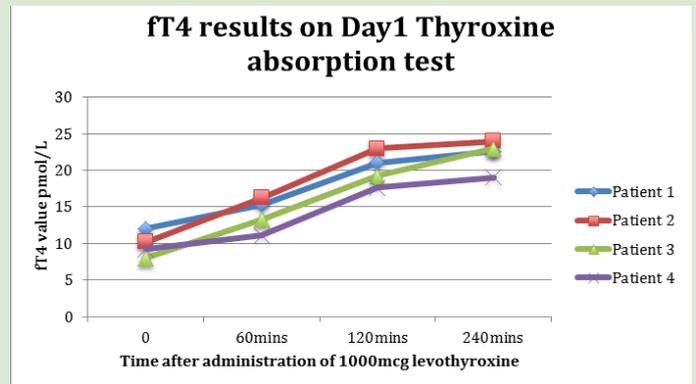
Directly Observed Therapy (DOT) that is used for tuberculosis treatment, where a trained health worker watches the patient swallow every dose can be used for patients receiving doses of Levothyroxine of more than 2micrograms/kg with persistently increased TSH levels who are considered as having thyroid deficiency that is refractory to treatment. Poor adherence is the most common cause of failure of therapy and if this is suspected, a supervised test may be helpful.

Case report

We present 4 patients with hypothyroidism on doses of levothyroxine which varied from 200mcg to 650mcg and TSH between 19.4 and 39. They all underwent an observed administration of 1000micrograms of levothyroxine with blood tests at baseline and at intervals up to 240minutes on day one, therapy was then continued weekly for four weeks with measurement of TSH and T4 levels.

All patients had a peak two-fold increase from baseline of their T4 at 240minutes after administration of 1000micrograms of levothyroxine. The subsequent results over the course of the 4week supervised dosing showed TSH stabilise within normal limits.

The rapid rise in the T4 level after taking the drug essentially ruled out malabsorption of the drug. This simple supervised dosing of levothyroxine can potentially be administered in primary care setting where most patients with hypothyroidism are managed, to evaluate the discrepancy between laboratory results of elevated TSH despite supraphysiological levothyroxine doses before referral for specialist review. If patients continue to show poor compliance then thyroxine administered once weekly under supervision can be offered.



Discussion

Directly Observed Therapy has the advantage of close monitoring that may improve adherence. On the other hand, it moves away from the adherence models of communication with cooperation between patient and provider which could make adherence worse if rigidly applied. Cost of drugs versus resources would need to be evaluated.

Directly Observed Therapy (DOT)

- Preferred treatment strategy for all patients
 - Improves adherence
 - Reduce acquired drug resistance, treatment failure, and relapse
 - DOT saved 6.8 million lives in 1995-2010
- Care provider observes patient taking every medication dose until treatment is completed

