藥物(amiodarone)引發之甲狀腺功能異常

Amiodarone induced thyroid dysfunction

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Amiodarone is an iodinated benzofuran derivative, structurally similar to thyroid hormones, containing about 37% of organic iodine. It is a lipophilic drug and has a large but variable volume distribution. Oral amiodarone was approved for treatment of life-threatening and recurrent ventricular arrythmia. Amiodarone is widely used in patients with atrial fibrillation. It is one of the most effective antiarrhythmic drugs but carries a high toxicity profile. Adverse amiodarone reactions which involve different organs, including lung, eye, liver, skin and thyroid.

Thyroid dysfunction is a common complication of amiodarone therapy. Thyroid abnormalities have been reported in up to 14%-18% of patients receiving long-term amiodarone therapy. Underlying thyroid status and iodine intake appear to influence the incidence and type of thyroid dysfunction.
Treatment with amiodarone is associated with changes in thyroid function tests, but also with thyroid dysfunction (amiodarone-induced hypothyroidism, AIH, and amiodarone-induced thyrotoxicosis, AIT). It is recognized to act at different enzymatic and non-enzymatic levels in the thyroid. Both AIH and AIT may develop in normal thyroid gland or in underlying thyroid abnormalities. AIH does not require amiodarone withdrawal, and is treated with levothyroxine replacement. Two main types of AIT are recognized type 1 AIT, a form of iodine-induced hyperthyroidism occurring in nodular goiter or Graves' disease. Type 2 AIT resulting from destructive thyroiditis in a normal thyroid gland. Mixed / indefinite form exist due to both pathogenic mechanisms. AIT 1 is treated with antithyroid agents. AIT 2 is treated with oral glucocorticoids. Once euthyroidism has be restored, AIT 2 patients are followed up without treatment. The decision to continue or stop amiodarone in AIT should be individualized in relation to cardiovascular risk stratification. In the presence of rapidly deteriorating cardiac conditions, emergency thyroidectomy may be required for all forms of AIT.

The long half-life of amiodarone and the potential severity of some of the adverse effects make early recognition important. Careful monitoring of patients is essential. The value of regularly monitoring amiodarone treated patients for thyroid dysfunction is unclear, mainly because the onset of dysfunction may be unpredictable.