Liothyronine is beneficial in patients with low-T_3 syndrome and dilated cardiomyopathy

A syndrome of low endogenous T_3 has been reported in patients with dilated cardiomyopathy; development of low-T_3 syndrome predicts a poor outcome in these patients. The pathophysiological role of decreased T_3 levels and the usefulness of synthetic thyroid hormone (liothyronine) administration in patients with heart failure are not yet fully known. Pingitore and colleagues, therefore, analyzed the effect of liothyronine treatment on the clinical status, left ventricular function and neuroendocrine profile of patients with dilated cardiomyopathy. Twenty clinically stable patients (age range 64–77 years) with ischemic or nonischemic dilated cardiomyopathy were randomly allocated to 3 days of treatment with intravenous liothyronine or placebo infusions.

Liothyronine was well tolerated. In liothyronine-treated patients, blood levels of norepinephrine, N-terminal brain natriuretic propeptide and aldosterone decreased substantially compared with baseline values. These changes were not observed in placebo-treated patients. Liothyronine treatment also increased end-diastolic left ventricular volume and stroke volume, whereas it did not alter cardiac workload.

The authors conclude that short-term administration of liothyronine reduces activation of the neuroendocrine system and improves left ventricular performance in patients with dilated cardiomyopathy and low-T_3 syndrome. They suggest that further trials should be performed to determine whether the observed effects will be sustained during chronic administration of liothyronine.

Original article Pingitore A *et al.* (2008) Acute effects of triiodothyronine replacement therapy in patients with chronic heart failure and low-T_3 syndrome: a randomized, placebo-controlled study. *J Clin Endocrinol Metab* [doi:10.1210/jc.2007-2210]

Anastrozole increases predicted adult height of GH-deficient adolescent boys

Estrogen is a principal regulator of epiphyseal fusion in females and males. Mauras *et al.* conducted a double-blind, randomized, placebo-controlled trial to determine whether estrogen suppression with the selective aromatase inhibitor anastrozole, administered to growth hormone (GH)-deficient adolescent boys who were also receiving GH therapy, delays epiphyseal fusion (and, therefore, retards bone-age advancement) and whether it increases predicted adult height.

Patients were randomly allocated to receive anastrozole 1 mg daily or placebo, in addition to their usual GH therapy, and were examined at 3-month intervals. Anastrozole treatment continued for 36 months or until completion of linear growth. Of the 52 patients recruited, 50, 41 and 28 completed 12 months, 24 months and 36 months of treatment, respectively.

Bone-age advancement was slower in anastrozole-treated boys, compared with placebo-treated boys. Differences in bone age between the groups were significant after 24 months and 36 months of treatment. Predicted adult height gain from baseline was greater in anastrozole-treated than placebo-treated boys, with an increase of 4.5 ± 1.2 cm after 24 months and 6.7 ± 1.4 cm after 36 months in the anastrozole arm, compared with a gain of 1 cm at both time points in the placebo arm. Pubertal progression rates were similar in both groups.

The authors conclude that 2–3 years of anastrozole treatment is effective in GH-deficient adolescent boys on GH therapy. Long-term follow-up will be needed to fully evaluate the safety and efficacy of this treatment.

Original article Mauras N *et al.* (2008) Anastrozole increases predicted adult height of short adolescent males treated with growth hormone: a randomized, placebo-controlled, multicenter trial for one to three years. *J Clin Endocrinol Metab* **93:** 823–831

Increasing TSH levels correlate with increasing risk of DTC

High TSH levels are known to induce thyroid hypertrophy. To determine the role of TSH in the development of thyroid cancer, Haymart *et al.* conducted a retrospective cohort study to examine the association between preoperative TSH levels and differentiated thyroid cancer (DTC). They analyzed data from 843 patients who underwent thyroid surgery at a single center between 1994 and 2007 and for whom preoperative TSH levels and a histopathological diagnosis of DTC or benign thyroid disease were recorded.

Of the 843 patients, 108 were taking levothyroxine before having thyroid surgery. Mean