High-dose celecoxib does not improve survival of patients with differentiated thyroid cancer

Cyclo-oxygenase 2 (COX2) is highly expressed in thyroid cancer tissue, compared with non-neoplastic and benign thyroid tissues, and inhibition of this enzyme has been shown to retard growth and progression of various tumors. Mrozek *et al*. report on a phase II clinical trial that evaluated the efficacy of a selective COX2 inhibitor, celecoxib, in patients with metastatic differentiated thyroid cancer (DTC) who had not responded to standard therapy.

This trial enrolled 32 patients with metastatic DTC and progressive disease, from two cancer centers in the US. Patients were given 400 mg celecoxib orally twice daily for 12 months, or until disease progressed. Clinical response to celecoxib was assessed every 12 weeks during treatment, by measurement of serum thyroglobulin levels, by CT imaging, or both. In all, 20 patients stopped taking the drug because of disease progression, and a further 3 stopped because of side effects. Of the remainder, only one patient who completed the study was progression-free at 12 months, and one patient had a partial response to treatment after 6 months. No serious adverse effects (including thromboembolic, cardiac, or gastrointestinal bleed) were observed.

The authors conclude that celecoxib is not associated with improved progression-free survival in patients with metastatic DTC. The authors speculate that the effect of celecoxib on tumor cells could be cytostatic rather than cytocidal, and suggest that COX2 inhibition might have an effect on early-stage cancers.

Original article Mrozek E *et al.* (2006) Phase II study of celecoxib in metastatic differentiated thyroid carcinoma. *J Clin Endocrinol Metab* [doi: 10.1210/jc.2005-2498]

Effects of growth hormone treatment on aortic diameter in Turner syndrome

Growth hormone (GH) is often administered to girls with Turner syndrome to increase adult stature; however, supraphysiologic levels of GH are known to be associated with increased cardiac output and cardiac hypertrophy, which can lead to aortic changes. Increased aortic diameter is a risk factor for aortic dissecting aneurysm (splitting of and bleeding into the aortic wall), an often-fatal condition for which patients with Turner syndrome are already at risk, even without GH treatment. So, Bondy *et al.* aimed to see whether GH treatment is associated with increased aortic diameter.

Patients with Turner syndrome were recruited via an NIH website. Of these, 101 patients, aged 7–30 years, could supply information on their GH usage: 53 had been receiving GH for ≥2 years and 48 had never received GH. MRI was used to measure the diameter of the ascending and descending aorta, and to ascertain whether a bicuspid aortic valve (a defect associated with aortic aneurysm) was present.

The participants were not randomly allocated, but baseline characteristics of the groups were similar (although GH-treated patients were 8 cm taller on average). Aortic diameter was larger in the GH group than in controls, but multiple regression analysis showed that this was a result of the increased height conferred by GH treatment, and was not related to history or length of GH treatment. Similar numbers of patients in each group had bicuspid aortic valves.

Further randomized studies are needed to test the reproducibility of these findings, and to explore the longer-term effects of GH treatment.

Original article Bondy CA *et al.* (2006) Growth hormone treatment and aortic dimensions in Turner syndrome. *J Clin Endocrin Metab* **91:** 1785–1788

A novel quadruple-labeling procedure to assess bone formation

Tetracyclines bind to newly calcified bone, and fluoresce under UV light. These characteristics can be used to assess bone formation: after taking oral tetracycline on two occasions (double labeling), an iliac-crest biopsy is obtained. The rate of bone growth equals the distance between labeled areas of bone, over the time interval between tetracycline doses. To obtain longitudinal data on bone formation, however, the double-labeling and biopsy procedures must be repeated. Here, Lindsay *et al*. report a novel quadruple-labeling procedure, which allows short-term longitudinal information on bone formation to be obtained from a single biopsy. Following an initial double-labeling procedure, a second double-labeling procedure is performed,

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