Absence of *Oxalobacter formigenes* is associated with formation of kidney stones

Oxalobacter formigenes is a Gram-negative, anaerobic bacterium that breaks down oxalate in the colon. Small studies have suggested that the absence of *O. formigenes* might result in increased urinary oxalate levels and, thus, lead to the formation of calcium oxalate kidney stones. Kaufman *et al.* have determined in a large population that lack of *O. formigenes* colonization is associated with an increased risk of kidney stone formation but not necessarily with urinary oxalate excretion.

This case–control study enrolled 247 patients (aged 18–69 years) who were being treated for calcium oxalate stones at urology practices at one of four hospitals in the US, and 259 controls without stone disease who were matched for age, sex and geographical region. The participants' stool samples were collected and cultures were grown in an *O. formigenes*-selective medium. Presence of the bacterium was then determined by use of an oxalate precipitation assay. *O. formigenes* colonization was less prevalent among patients with kidney stones than among controls (17% vs 38%; multivariate odds ratio 0.3, 95% CI 0.2–0.5). This relationship was consistent regardless of age, sex, ethnicity, region, dietary oxalate consumption or previous use of antibiotics. Among a subset of participants who submitted 24 h urine samples (139 patients and 138 controls), urinary oxalate levels were positively associated with an increased risk of developing kidney stones ($P_{trend} = 0.002$); however, urinary oxalate levels were not related to the presence or absence of *O. formigenes*.

Original article Kaufman DW *et al.* (2008) *Oxalobacter formigenes* may reduce the risk of calcium oxalate kidney stones. *J Am Soc Nephrol* [doi:10.1681/ASN.2007101058]

Combining low-sodium diet and diuretic maximizes antiproteinuric efficacy of RAAS blockade

A high sodium intake inhibits the renoprotective effect of blockade of the renin–angiotensin–aldosterone system (RAAS). Vogt *et al.* investigated the combined effects of a low-sodium diet and the diuretic hydrochlorothiazide on proteinuria and blood pressure in Dutch patients receiving the angiotensin-receptor blocker losartan.

The study cohort comprised 33 nondiabetic patients with stable proteinuria (24 male; mean age 50 years; mean BMI 27.5 kg/m^2). The mean baseline proteinuria was 3.8 g/day. Patients were randomized to a high-sodium (200 mmol/day) or a low-sodium (50 mmol/day) diet for 18 weeks; they then switched to the other diet for a further 18 weeks. During both 18-week periods, patients received each of the following for 6 weeks, in random order: placebo; losartan (100 mg/day); and losartan (100 mg/day) plus hydrochlorothiazide (25 mg/day).

Proteinuria was reduced by 22% from baseline with the low-sodium diet alone and by 30% with losartan alone. The reduction in proteinuria was greater when losartan was combined with a low-sodium diet (55%) or with hydrochlorothiazide (56%), but it was greatest when losartan was combined with both a low-sodium diet and hydrochlorothiazide (70%). A similar pattern was observed for blood pressure reduction. The additive antiproteinuric effects of a low-sodium diet and hydrochlorothiazide were particularly pronounced in patients who responded poorly to losartan alone.

The authors conclude that a low-sodium diet and a diuretic are equally effective at enhancing the antihypertensive and antiproteinuric effects of RAAS blockade—and are particularly beneficial in patients who are resistant to RAAS blockade alone—but note that the increase in efficacy is greatest when the two interventions are combined.

Original article Vogt L *et al.* (2008) Effects of dietary sodium and hydrochlorothiazide on the antiproteinuric efficacy of losartan. *J Am Soc Nephrol* **19:** 999–1007

Immunization against angiotensin II can reduce ambulatory blood pressure

Hypertension can be adequately controlled with pharmacological treatment; however, low adherence to medication means that many patients with hypertension do not achieve such control. Treatment of hypertension by immunization against angiotensin II, involving for example a few injections per year, could markedly improve patient compliance. In a multicenter, double-blind, placebo-controlled phase IIa trial, Tissot *et al.* examined the safety