ANSWER TO PHOTO QUIZ (PAGE 223)

A CRYSTAL CLEAR DIAGNOSIS

DIAGNOSIS

The diagnosis of acute crystal-induced kidney insufficiency by acyclovir was established by birefringent microscopy, which showed typical needle-shaped crystals. It is well known that different kinds of medication can cause crystal-induced kidney damage, due to intratubular precipitation of crystals which results in obstruction.

Acyclovir, but also amoxicillin, sulphonamide antibiotics, ciprofloxacin, indinavir, triamterene and methotrexate, are known to cause crystal-induced kidney damage. In the case of acyclovir, apart from crystal-induced acute kidney insufficiency, also direct tubular damage might be responsible for the loss of renal function. The clinical course of crystal-induced kidney insufficiency is characterised by a rapid rise of serum creatinine within the first 12-48 hours after initiation of treatment.[1,2]

Apart from dose, volume depletion is a major risk factor. Patients are often asymptomatic although they may have flank pain.[3] Urine analysis shows crystals and sometimes microscopic haematuria.[4]

The gold standard for the diagnosis of crystal-induced renal damage is kidney biopsy. However, in most cases the disease is self-limiting and a biopsy is often not indicated. Diagnosis then relies on urine sediment revealing the characteristic crystals. In some cases temporary haemodialysis is necessary.[4]

Crystal-induced kidney failure should always be considered in the differential diagnosis of acute renal failure. It can be detected by polarised light microscopy of the urine sediment. Because renal function improves with fluid suppletion in most cases, haemodialysis is rarely necessary.

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