manuscript. CJD and DBM undertook a secondary literature review. MMH conducted the meta-analysis. CJD, MMH, PRM, DBM, and ALT assisted in drafting the manuscript. JNJ is the guarantor.

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Lesson of the week

Recurrent hypoglycaemia in a diabetic patient as a result of unexpected renal failure

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Hypoglycaemia is the most frequent complication of diabetes, affecting 10% to 25% of diabetic patients at least once a year and accounting for 3% to 4% of deaths in those treated with insulin.¹ Diabetic renal disease is a common complication and is the most prevalent cause of end stage renal disease in the western world.²

The kidney plays an important role in glucose homeostasis: in addition to metabolising between 30% and 40% of insulin,³ it provides up to 45% of endogenous glucose through gluconeogenesis during a prolonged fast.⁴ In renal failure, it cannot metabolise insulin or generate glucose, thereby increasing the risk of hypoglycaemia. Hypoglycaemia affects 67% of diabetic patients with renal failure, and in almost half (46%) of patients it is often related to the medication they are taking.⁵ I present a case where a decline in renal function after treatment with diclofenac resulted in recurrent episodes of hypoglycaemia, highlighting the importance of monitoring renal function in a diabetic patient with new onset hypoglycaemia.

Case report

A 64 year old man with a 15 year history of type 2 diabetes mellitus presented with a third episode of hypoglycaemia in two weeks. His diabetes was well controlled with 35 units of insulin a day, and he had had no hypoglycaemic episodes in the past two years. He had no history of hypertension, retinopathy, or nephropathy. He was compliant with his diet, insulin therapy, and exercise programme. At a regular check up two months previously, his blood pressure had been 116/70 mm Hg and his HbA_{1c} level 0.07 (normal 0.050 to 0.064), with home blood glucose readings of 5.0-8.0 mmol/l during the previous month. The ratio of urine microalbumin concentration to creatinine concentration was 2.0 (<2.5), and serum creatinine concentration was 104 µmol/l (44-106 µmol/l).

He had started to experience low back pain a month before presentation with his third episode of hypoglycaemia and saw his family doctor, who prescribed diclofenac 50 mg twice daily; his back pain then improved. Two weeks later, he started to experience headache and irritability with periods of

Remember to check renal function in a diabetic patient with new onset hypoglycaemia

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sweating. His wife brought him to the emergency department on three occasions—16, 19, and 23 days after starting diclofenac—and he was noted to be hypoglycaemic with blood glucose concentrations of 1.2–2.5 mmol/l. At each visit his symptoms responded to intravenous glucose and feeding. No investigations were done at his first two visits to the emergency department.

At his third visit, his blood glucose concentration was 1.2 mmol/l. A history taken at this visit after correction of hypoglycaemia was unremarkable. The patient reported no decrease in his appetite or increase in physical activity in the past month and no decrease in urine output. Physical examination was unremarkable, with a blood pressure of 150/90 mm Hg. There was no peripheral oedema. Investigations showed a raised serum creatinine concentration of 440 µmol/l and a raised serum urea concentration of 14.6 mmol/l (1.7–8.3 mmol/l); serum potassium concentration was 4.8 mmol/l (3.5–5.0 mmol/l).

Since starting to take the non-steroidal anti-inflammatory drug diclofenac, the patient had developed a decline in renal function with a fourfold increase in serum creatinine. Diclofenac was immediately stopped and his insulin dosage was decreased. Two weeks later, his serum creatinine concentration returned to baseline and he resumed his usual insulin dosage, with no further episodes of hypoglycaemia and with reasonable glucose control.

Discussion

Non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used for managing pain. They can cause acute renal failure in susceptible individuals by inhibiting the synthesis of renal vasodilatory prostaglandins.⁶ In the general population, the frequency of acute renal failure from NSAIDs is not known but is probably less than 1% a year.⁷ A French review of 2000 patients with acute renal failure, however, found that 6.8% of the cases were associated with NSAIDs.⁸

In chronic, progressive renal failure the physician is aware of the risk associated with NSAIDs and adjusts the dose of insulin or hypoglycaemic agents accordingly. However, when renal dysfunction is unexpected, a patient with poorly controlled glucose concentrations may notice improvement in glycaemic control or hypoglycaemia because of the decreased requirement for insulin or hypoglycaemic agents, and both the physician and the patient may be pleased with this desired but passive improvement in glycaemic control. In such patients, it is important to check that there has been no recent decline in their renal function.

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Corrections and clarifications

German cancer specialist cleared of fraud allegations

We made two errors when editing this news article by Annette Tufts (6 March, News Extra, bmj.com). We said that the German Research Foundation had failed to find Friedhelm Herrmann, a former professor at Ulm University, guilty of having acquired grants on the basis of forged scientific results. We should have said that the foundation failed to charge Professor Herrmann with that offence. The article's title was also wrong. It should have said: "Research foundation failed to charge professor with fraud offence."

Adding aminoglycoside to β lactam does not improve results

In this summary in This Week in the BMJ (of the paper by Mical Paul and colleagues, "β lactam monotherapy versus β lactam-aminoglycoside combination therapy for sepsis in immunocompetent patients: systematic review and meta-analysis of randomised trials," pp 668–672) a vital word was wrong. The first sentence should read: "In patients with sepsis but without [not "with"] neutropenia, mortality is no different whether β lactams and aminoglycosides are used together or β lactams are used alone, although the risk of adverse effects is increased with β lactams and aminoglycosides." And, as you will have noticed, we also slipped up on the spelling of aminoglycoside in the summary's title.

National reporting system for medical errors is launched

In this news article by Vittal Katikireddi (28 February, p 481) we riskily suggested that the launch in February of the new national reporting and learning system (NRLS) in England and Wales was the world's first national system for collecting reports of health system failures and any error compromising patients' safety. We have since been advised that the Danish national incident reporting system was launched in January 2004.

Interactive case report

A 66 year old with breathlessness

This case was described on 20 and 27 March (*BMJ* 2004; pp 698 and 758). Debate on her management continues on bmj.com (<http://bmj.com/cgi/eletters/328/7441/698>). On 17 April we will publish the

outcome of the case together with commentaries on the issues raised by the management and online discussion from the patient, a general practitioner, and relevant experts.