kidney news

Volume 4, Issue 2 June 2002

Introduction

This editions clinical case is a small challenge. It illustrates two important points. Early referral, and the taking of a comprehensive history are important (nothing new there). But when things do not add up, again revisiting the history can be fruitful.
The importance and contribution of OTCs is emphasised.

Sorry, no website developed yet. I am eagerly working on it, but it is more time consuming than I thought!

Case

A 53 year-old married businessman comes for a routine medical check-up, and re-supply of his prescription medications. He has been a patient of your practice for 10 years. He has been ambivalent about taking his asthma medication (Serevent 25µg 2 puffs bd) in the past.
He continues to smoke 15 cigarettes per day despite his asthma, and although trying to give up, has not achieved this yet. Total smoking history of 25 pack-years.
He has also erratically taken his blood pressure medications. His last BP recording was 148/88. And his blood pressure diastolic values have often been as high as 100mmHg. Currently he takes cilazapril 5 mg daily. No diuretics.
More recently, however, he has taken a greater interest in his health, and goes to the gym occasionally, and runs at least three times per week.
A part from some mild symptoms of prostatism, with reduced urine flow, he has no other medical problems.
He denies any other medications. No allergies.
Father died aged 75 of old age and Mother 58 of emphysema. He has one sister and one brother both with good health. There is no family history of renal problems, heart or liver problems.
Examination reveals: Weight 91kg. BP 150/100. BMI 28.4. No oedema. Heart sounds dual with no murmur. Chest clear, in particular no wheeze. No epigastric or carotid bruits. No abdominal tenderness or scars. No evidence of peripheral vascular disease. PR examination normal.
You decide to do some routine tests, as none have been performed for a year.

Case (continued):

Initial investigations:
Blood count normal. Liver tests normal. Cholesterol 5.2 mM. Electrolytes normal. Serum urea 9.9 and serum creatinine 0.165 mM. MSU has no blood and no protein and is clear on culture.
You refer him regards the high serum creatinine.

1. What tests and other investigations now?
2. What diagnoses are likely?
3. Which ones can you exclude?

Case discussion:

1. This man has several possible diagnoses. He has a long history of hypertension, which has been treated. Although the BP control has been satisfactory recently, compliance has not been marvellous (and he admits to this and you are aware of this). Despite no clinical evidence of generalised PVD or a renal bruit, impaired renal function on an ACE inhibitor - renal artery stenosis - is a reasonable clinical diagnosis, and needs to be excluded. Supporting this is the absence of proteinuria and blood in the MSU. Some proteinuria (usually < 3g/24-hours) may occur in long-standing hypertension, however. As there is renal impairment, the choice was a renal MRA (magnetic resonance arteriogram). This is performed, and is normal.
This man has mild prostatism symptoms, obstruction is a reasonable thought. With a normal MSU, obstruction needs to be excluded. Renal ultrasound was performed, and this showed two normal sized kidneys, and no obstruction. ***Continued overleaf.***

What's In Here This Time?

1 Introduction

1 Case history

1 Case discussion

2 Case discussion (continued)

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Case discussion (continued):

2. A week later, off the ACE, the repeat serum creatinine has now risen to 0.206 mM. Other tests show serum calcium of 4.1 mM. He is now complaining of being constipated. He is not confused, and otherwise feels well. Renal failure, and high calcium (giving the constipation) and no abnormality in the urine support two more common diagnoses: myeloma or primary hyperparathyroidism. He is fluid depleted (common with the hypercalcaemia). Serum electrophoresis and parathyroid hormone are awaited, and a repeat serum creatinine (now three weeks since initial visit) is 0.42 mM. A renal biopsy is performed. Repeat bloods for serum calcium and creatinine confirm the high values.

Repeat history confirms the details as above, but now reveals the man takes two OTC vitamins. One contains 5 µg vitamin D per capsule – he takes the recommended one per day. The other has a small amount of calcium.

He is admission for forced (IV fluids and diuretics) diuresis, and pamidronate IV to treat the hypercalcaemia. Both of these OTC vitamins are ceased. One week later, the serum calcium has fallen to normal at 2.2 mM, and the serum creatinine is 0.186 mM. One month after this therapy, his creatinine is 0.12 mM, and calcium 2.19 mM, albumin 40 g/l. Blood pressure at this time is: 136/78 on:
metoprolol CR 95 mg daily and
cilazapril 5 mg daily.
The parathyroid hormone and vitamin D levels are normal.

This case illustrates the importance of a good history, and the importance of a good medication history – both prescribed and OTC, let alone illicit - in cases of renal dysfunction. Medications are often a significant contributor to renal failure – acute or chronic.

Of significance in this case is the ***additional*** 5 µg vitamin D per capsule of the vitamin supplement to his daily food intake. This capsule amount is around the recommended daily intake (RDI). Dietary history in this man reveals he takes a reasonable diet, adequate in vitamin D and calcium (dietician advice was sought). Sometimes he takes two capsules of vitamin D. His other vitamin supplement had some calcium within (small amount, however).

Over a period of several months of regular ingestion, this man "poisoned" himself with the regular dosing of vitamin supplements. He happily ceased the medications when all was explained to him, and intends to remain off them without future medical advice.

He also has regained normal renal function (probably with no long term sequelae). He denied the supplementary vitamins in the first ***two*** histories as he thought they were not important!

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Investigation and management of impaired renal function.
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