nued, and a lepidurin bolus of 0.1 mg/kg was administered. Activated partial thromboplastin time (APTT) increased from 36" to 72", and hemodialysis was normally performed. APTT was monitored every 2 hours to maintain it between 2 and 3 times the control value (33"). A new lepidurin administration (0.05 mg/kg) was not required until 16 hours later. When renal function improved, a continuous lepidurin infusion (0.005 mg/kg/h) was started. Platelet function recovery was noted at 48 h (fig. 2). Seven days later the patient was stabilized and treatment was started with acenocoumarol. Six days later, international normalized ratio (INR) was 2.8, and lepidurin was therefore discontinued.

Lepidurin is the therapeutic option for patients with HIT in our setting. Lepidurin is an antithrombotic drug that inactivates thrombin directly, so that it also has a bleeding risk[3] and requires monitoring. Recent studies suggest that the doses recommended by the supplier are too high.[3,4] This recommendation is relevant in renal failure patients because lepidurin excretion depends exclusively on the glomerular filtration rate.

The reported case alerts about two significant issues in clinical practice. The first issue is that HIT should be considered as a potential cause of thrombosis of the hemodialysis circuit in patients treated with heparin. Moreover, in patients with renal impairment lepidurin should be started at low doses, and drug levels should be frequently monitored.

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A 48-year-old male with renal infarction and thrombophilia

Nefrología 2008; 28 **(4)** 463-464

To the editor: Acute renal infarction results from renal artery occlusion by embolic or thrombotic events.[1] Renal embolism is most commonly caused by thrombi released from the heart in patients with heart disease. Thrombosis is usually due to trauma, or to generalized atherosclerosis in elderly patients. A less common cause are hypercoagulability states, associated to an increased risk of venous, or more rarely arterial, thrombosis. Such association is stronger in patients aged < 55 years and women.[2]

The case of a 48-year-old male patient whose father had died from a stroke is reported. The patient had a personal history of HBP, dyslipidemia and former smoking. In 1994 he experienced an inferolateral non-Q wave AMI, and in 2001 he was admitted to hospital for an ischemic stroke. He was then diagnosed a mutation in the prothrombin (FII 20210) and methylenetetrahydrofolate reductase (MTHFR) genes, with normal homocysteine levels. Patient was again admitted to hospital in 2002 for non-Q wave AMI. He was being treated wit ramipril, acetyl salicylic acid, omeprazole, pravastatin, and metoprolol.

He attended the emergency room for a sudden, continuous pain in the periumbilical region and right flank for the past 72 hours. Pain was irradiated to the right renal fossa and associated to nausea, vomiting, and dark urine.

Physical examination revealed abdominal tenderness in the periumbilical region and right flank.

Laboratory tests showed elevated GOT, GPT, and LDH levels with normal renal function, electrolytes, and coagulation. Urine analysis found proteinuria (30 mg/dL). Chest and abdominal X-rays were unremarkable.

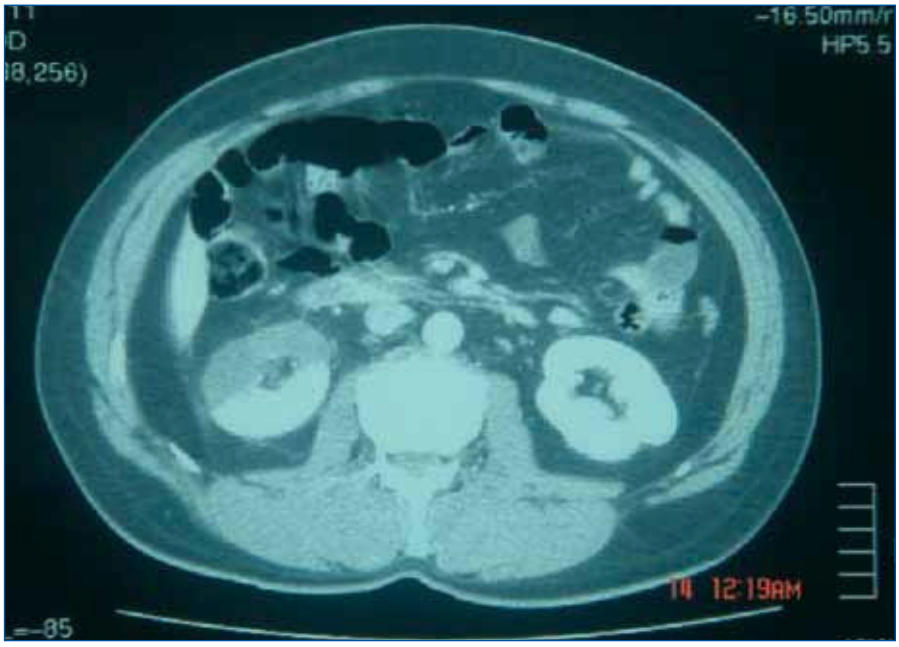

Figure 1. Abdominal CT scan with contrast showing patchy hypodense areas in the right kidney.

An urgent abdominal CT scan with contrast revealed patchy hypodense areas in the right kidney consistent with renal infarction (fig. 1). The patient was admitted to the nephrology department, where anticoagulation with low molecular weight heparin at therapeutic doses was started. Subsequent measurements of vitamin B12, folate, antinuclear and antiphospholipid antibodies, tumor markers, and lipid metabolism were all normal. Diagnosis of mutation in the FII 20210 gene (heterozygous) and the MTHFR gene (homozygous) was confirmed, with homocysteine levels in the upper normal range. The thrombophilia study was otherwise normal. A 99m-Tc-DTPA perfusion study showed a triangular uptake defect in the upper pole of the right kidney consistent with renal infarction. A 99-Tc-DMSA renal scan confirmed diagnosis.

Patient had a favorable course, with disappearance of pain and gradual decrease in LDH. Heparin was replaced by acenocoumarol for an indefinite time, and folic acid was added due to the finding of homocysteine levels in the upper normal range.

Rapid diagnosis of renal infarction is critical if thrombolysis or surgery is to be attempted to preserve kidney function. There are several helpful tests for diagnosis, and the choice depends on test availability. CT with a contrast agent provides a fast, accurate diagnosis. Isotope flow imaging with DTPA-Tc^{99m} shows an absent or decreased perfusion in the affected kidney. Doppler ultrasound has a limited value, and renal arteriography is the definitive diagnostic procedure.

Mutation in the FII 20210 gene is associated to a 30% increase in baseline prothrombin levels that predisposes to thrombotic events. Hyperhomocysteinemia may be congenital or acquired. Acquired forms are secondary to folate or vitamin B12 or B6 deficiency. Congenital forms are due to mutations in the cystathionine-b-synthetase gene or the MTHFR gene, more common, and which is associated to hyperhomocysteinemia particularly in homozygotes with folate deficiency. Hyperhomocysteinemia predisposes to thrombotic events by endothelial activation, muscle cell proliferation, and changes in NO production or sterol metabolism in endothelium.[3]

Absence of hyperhomocysteinemia in this patient with MTHFR mutation was possibly due to the fact that he was never detected vitamin B12 or B6 or folate deficiency.

Thrombophilia should be searched in patients with recurrent venous thrombotic events. However, such search does not appear to be indicated in patients with isolated arterial thrombosis, especially if they have risk factors for arterial disease.

The risk of venous thrombosis in patients with FII 20210 or MTHFR mutation is low. Its role in arterial thrombosis is unclear, with a slight risk of AMI or stroke occurrence. An increased risk exists in patients aged < 55 years and female patients, with a more significant effect if concomitant coagulation disorders and associated cardiovascular risk factors exist.[4]

As to therapeutic management, prophylaxis should be started in asymptomatic patients or patients with thrombosis associated to risk situations, and indefinite anticoagulation should be given to patients with two or more spontaneous thromboses, life-threatening thrombosis, or thrombosis linked to more than one genetic abnormality.

In our case, the patient was <55 years, and had FII 20210 and MTHFR mutations and cardiovascular risk factors (HBP, former smoker, drinker). Management would have required the previous start of indefinite anticoagulation that would have prevented the occurrence of a third thrombotic event.[5]

The interest of the reported case lies in the occurrence of renal infarction in a patient with mutation in the FII 20210 and MTHFR genes, a previously unreported clinical condition.

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Carcinoid tumor and hypernephroma coexisting in a patient with chronic renal failure

Nefrología 2008; 28 **(4)** 464-466

To the editor: Contraindicating the start of chronic dialysis in a patient with an advanced malignant tumor[1] may be very difficult if the patient is in a good general condition and symptom-free. An example of a situation where this may occur are patients with carcinoid tumors, an uncommon condition with a high survival rate despite its high metastatic capacity that grows slowly and has an indolent course in many cases.[2,3]

The case of a 72-year-old male patient in whom evidence of chronic renal failure for an unknown cause was detected in May 2006 during a work-up study for isomorphic macrohematuria episodes is reported. A cystoscopy and several urine cytologies showed no malignancy. The patient started hemodialysis two months later due to uremic clinical signs. An urological MRI performed a little later showed right pyelocalycial ecta-