

123mg/dl, moderate loss of hearing, arterial hypertension treated with enalapril 20mg, obesity and a BMI of 36.26 (weight 120kg, height 1.81m), altered fasting glucose (below 126mg/dl), normal glycosylated Hb, and dyslipidaemia and hiperuricaemia undergoing treatment. The patient was an ex-smoker who used to smoke one packet a day. His thyroid levels were normal. A kidney biopsy was carried out in 1995: OM (12 glomerules) focal and segmentary sclerosis evolving into sclerosing glomerulopathy, IF with mild intensity IgM mensajal nephropathy and IgA and IgM in tubular cylinders. EM 2 glomerules. Irregular capillary BM thickening and focal splitting of the lamina densa. Total podocyte pedicel fusion. In one sector, there was effacement of the glomerular structure with an electron

dense deposit of abundant amorphous material. The alteration in the lamina densa indicated Alport disease, the rest of the findings indicated focal sclerosing glomerulonephritis. Kidney ultrasound: RK 95.6 x 52 x 53, LK 99 x 51 x 52. No abnormalities were detected in the kidney Doppler.

A low protein, low calorie diet was recommended and a 75mg/day dose of losartan was added to the treatment regimen (the maximum amount tolerated by the patient). A very slight reduction in the level of proteinuria to 3.6g/day was observed. Gastric by-pass surgery was carried out and a total reduction in weight of 36kg was observed with the patient reaching a BMI of 25.6. Nephrological tests: creatinine 1.56mg/dl, proteinuria 0.3g/day, urea 65mg/dl and normal blood pressure with enalapril 5mg/d; the

minimum dose of lipid reducing drugs was maintained, uricaemia and glycaemia were normal.

In the three years after surgery, the patient made good progress thanks to treatment adherence (diet), aerobic exercise and clinical and psychological support.

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## B) BRIEF PAPERS ON BASIC AND CLINICAL RESEARCH

### Iatrogenic hyperpotassaemia in elderly patients with hidden kidney failure in Primary Care

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#### Dear Editor,

One of the practical applications of estimating glomerular filtration (GF) using formulas is the possibility of being able to adapt the prescription for patients with hidden chronic kidney disease,<sup>1</sup> thereby avoiding potential iatrogenic complications, with potential to induce hyperpotassaemia.<sup>2</sup>

By means of a randomized sampling process, we selected a population made up of 4,014 patients over the age of 65 from the Spanish province of Huesca, who were seen in health centres with the OMI-AP IT system (Primary Care IT Organisation and Management, Stacks @), which allowed us to check the prescriptions. After excluding cer-

tain patients for different reasons, we established the GF using the abbreviated MDRD formula for 3,286 subjects. As a result, we detected 291 patients with hidden kidney failure (normal serum creatinine levels and an estimated GF < 60ml/min/1.73m<sup>2</sup>). We recorded the active ingredients prescribed by the general practitioners of 269 patients for acute or chronic conditions during a 12 month period (2007). Within this group, 211 patients (72.5%) were exposed to drugs, either alone or in combination, that could favour hyperpotassaemia. The mean serum potassium for the 211 patients was 4.553 ± 0.52meq/L (CI 95% 4.48-4.62) (median 4.6) (range 3.1-6). If we consider hyperpotassaemia<sup>3</sup> levels above 5meq/l, the results indicate that thirty of the 211 patients presented this condition during the 12 month follow up. Table 1 shows the different drugs prescribed to these patients along with the serum potassium levels of each subgroup. The most common combination was NSAID with ACE inhibitors or ARA II. In monotherapy, NSAID were the drugs that were most

commonly associated with hyperpotassaemia. Because of the design of the study, an individualised follow up of the patients was not carried out in order to determine whether there were any clinical consequences of the hyperpotassaemia. Nevertheless, the fact that this may have occurred in extreme cases should not be ruled out (seven patients had blood potassium levels of 5.7meq/l or higher).

Our study highlights the importance of correct dosage adjustment and prescription checks carried out by the professional to verify the use of certain drugs in patients with chronic kidney disease, which could remain undetected if only creatinine levels are estimated.<sup>4</sup> Fortunately, GF estimation using MDRD has been available in our province for a few months now. In the same way that pharmacies in some hospitals in Spain issue a series of warnings when a potentially dangerous drug is prescribed to patients admitted with reduced GF, it would be good if a similar system were introduced in Primary Care. For example,

**Table 1.** Drug combinations that caused hyperpotassaemia in patients with ORF

Drugs	No. patients	Serum potassium
NSAID + ACE inhib/ARBs	13	5.42mEq/L (range 5.1-6)
Only ACE inhibs or ARBs	6	5.25mEq/L (range 5.1-5.5)
Only NSAID	5	5.48mEq/L (range 5.1-5.6)
NSAID + spironolactone + ARBs	2	5.5 and 5.7mEq/L
NSAID + spironolactone	1	5.5mEq/L
ARB + spironolactone	1	5.7mEq/L
NSAID + ACE inhibitors		
+ beta blockers	1	5.4mEq/L
Spironolactone only	1	5.3mEq/L

NSAID: non-steroidal anti-inflammatory drugs

ACE inhibitors: angiotensin-converting enzyme inhibitors.

ARBs: angiotensin II receptor blockers.

currently the OMI-AP system issues a warning when doctors prescribe a drug which has been highlighted for causing an allergic reaction. Furthermore, if this system or any other IT system were able to combine the information about the patient's GF with the precise adjustments in the handbook, it would be possible to avoid many of the consequences associated with incorrect prescriptions.

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## HBSAG positivization following vaccination during haemodialysis

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**Dear Editor,**

The administration of the hepatitis B virus (HBV) vaccine to patients

undergoing renal replacement therapy using the technique of haemodialysis is common in haemodialysis units, given that these patients are considered high risk. The vaccines used are made up of recombinant particles, which are mostly main surface proteins.<sup>1</sup> The vaccine used in our hospital is Engerix-B which involves an intramuscular injection of 40 micrograms at the following times: 0, 1, 2 and 6 months; in non-responsive patients, this is administered a second time.

The case of two patients who presented positive results for hepatitis B surface antigen (HbsAg) following vaccination is described here. The first case involves a 60-year-old woman who began renal replacement therapy (RRT) using the haemodialysis technique (HD) in April 2009 because of chronic kidney disease (CKD), secondary to mesangiocapillary glomerulonephritis, and received the first monthly dose of the vaccine on 30 May 2009. The second case involves a 51-year-old woman who began RRT via HD in March 2009 because of CKD secondary to Wegener's granulomatosis and received the second monthly dose of the vaccine on 30 May 2009. Viral marker testing was carried out on 2 June 2009 in accordance with the protocol established in our hospital and both patients were HbsAg positive. Therefore, it was decided that they should be isolated and that all patients and staff in the unit should be tested for hepatitis B virus DNA and transaminases. The results were negative and both patients also presented negative results for HbsAg.

To summarise, in the cases presented, false positive results for HbsAg were observed following vaccination.<sup>2,3,4</sup> The objective of describing these cases is to highlight the possibility of obtaining false positive results following vaccination and to remind others that serological tests should be carried out at least 2-3 weeks after vaccinations are administered.<sup>2,3,4</sup>