The adverse effects of exercise

Nefrología 2009;29**(4)**:365.

Dear Editor:

The publication of the article *Physiotherapy during haemodialysis: results from a force-resistance programme* by Eva Segura Orti, Vicente Rodilla-Alama and Juan Francisco Lisbon Parraga (Nefrología 2008;28(1): 67-72),[1] which demonstrated the need for and importance of physical exercise in chronic renal patients' routines, was very important. However, we felt the need to comment on a few points such as the adverse effects of exercise and programme adherence.

As recent studies have shown, patients with chronic renal failure are more susceptible to adverse events during exercise. For example, a patient could suffer ruptured tendons, fractures, muscle injuries and cardiovascular complications.[2,3] Cheema et al.[4] in 2005 demonstrated in their review that exercise can induce hypotension and gastrointestinal haemorrhage, as well as fatigue, sweating and pain in the feet.

In our study, in a university hospital in southern Brazil, twelve patients who participated in an intradialytic physiotherapy programme had, at five months, an average adherence rate of 83.66%. The exercise was carried out approximately thirty minutes after beginning haemodialysis, using a programme similar to that used in the above-mentioned study. The main complaint reported during the exercise was cramp (n = 6), followed by pain (n = 3), hypotension (n = 2) and excessive fatigue (n = 1).

At present, we have no knowledge of any specific studies on the risks of intradialytic exercise, but we do know that they are higher than in the general population: a prevalence of cardiovascular disease and myoskeletal corrections.[3] Standardisation in surveying these risks could help improve the prescription of intradialytic exercise and allow comparison between results from across haemodialysis departments.

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B) BRIEF COMMENTS ON BASIC RESEARCH AND CLINICAL INVESTIGATION

Allergy to latex and repeated vascular access thrombosis in haemodialysis

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Dear Editor:

Faced with the presence of recurrent vascular access (VA) thrombosis, it is necessary to research the possibility of anomalies in the vessels or a hypercoagulable state; however, to date no case has been described of an allergic reaction during the surgical act.

21 year old male who suffered repeated premature VA thromboses before starting haemodialysis, probably related to an allergic reaction to latex. The patient was admitted to our department following two unsuccessful VA attempts. Vascular anomalies and hypercoagulable state had been ruled out. Surgery was initially successful, but after a period of a few minutes the patient developed a maculopapular pruriginous erythema along the entire manipulated venous tract and a disappearance of the fistula thrill and bruit. The problem developed subtly, and may have gone unnoticed had there not been high suspicion.

Faced with the possibility of an allergic reaction, a skin prick test was carried out, which revealed an allergy to latex (10mm papule and RAST of 43.3kU/ml [class 4] [vn <0.35kU/ml] and some fruits (pineapple, chestnut, peach, banana and melon). A test for other possible related allergens was negative (formaldehyde, ethylene oxide, chlorhexidine, mepivacaine and lidocaine).

Before performing the fifth VA, the operating theatre was prepared according to the protocol for patients allergic to latex. A right humerocephalic AVF was created, proximal to the previous functioning AVF. The patient did not show any type of reaction either during or after the procedure.

Allergy to latex is generally an immediate allergic reaction mediated by IgE. In this instance, it appeared minutes after completing the VA, with

an increase in permeability and oedema in the vascular wall mediated by mastocyte degranulation and release of mediators, which were probably the cause of the premature fistula thrombosis. The patient retrospectively reported a history of oedema from balloons and preservatives, and pruritis of the tongue from some fruits. There is a high association (30-80%) between latex allergy and sensitivity to certain fruits, particularly those of tropical origin, coming from plants that are botanically unrelated to the plant from which latex is extracted.[1] An association has also been described between latex and ethylene oxide, and, even though the role of ethylene antioxidant antibodies in the pathogeny of latex allergy is unknown, it seems prudent to avoid the use of products sterilised with ethylene oxide in patients who are at risk.

Those who pose a higher risk of latex allergy include workers constantly exposed to latex, people with a tendency to multiple allergic conditions and children with urological malformations who have been subjected to numerous manipulations since infancy, which was the case with our patient, who presented with a chronic secondary obstructive uropathy of the urethral valves that required a number of interventions during infancy.[2] The number of operations to which a child has been subjected is clearly related to the presence of specific IgE antibodies against latex.

The population in dialysis with no previous history of allergic reactions should not be considered as at risk, despite their frequent exposure to latex.[3] However, one quarter of dialysis patients may at least show a positive allergy test. These allergic reactions[4,5] can have significant implications in this population, amongst which include the possibility of repeated fistula thromboses, and the consequential difficulty in attaining a functioning VA or risk in achieving a successful kidney transplant.

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Interferon-alpha and its deleterious effects on kidney transplant: regarding one case

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Dear Editor:

The prevalence of chronic infection due to the hepatitis C virus in kidney transplant patients ranges from 5 to 40%.[1] Hepatitis C increases the morbi-mortality in both haemodialysis and kidney transplant patients. Hepatitis C should be treated prior to transplant, since post-transplant treatment with interferon-alpha[2] increases the risk of acute humoral rejection, particularly during the immediate post-transplant phase.

We present the case of a 55 year old male with a history of chronic terminal renal failure secondary to mesangial glomerulonephritis IgA, who began haemodialysis in October 1989, arterial hypertension and chronic infection due to hepatitis C virus (genotype 1). The patient received a cadaver kidney transplant in 1997 and began immunosuppressant therapy with OKT3, corticosteroids and cyclosporine. Development following the renal transplant was without incident, with stable renal function (urea 45mg/dL, Cr 0.8mg/dL), negative proteinuria, chronically elevated transaminases, positive RNA-HCV with no evident clinical signs of cirrhosis or advanced hepatopathy, and cyclosporine levels within the therapeutic range. The patient regularly attended digestive reviews, where it was decided to recommend treatment with interferon-alpha and ribavirin for twelve months. His renal function remained stable during this period. Three months following completion of the treatment, renal function deteriorated with 133mg/dL urea, 1.8mg/dL Cr and 1.8g/24h proteinuria, which worsened with later tests (urea 203mg/dL and Cr 2.7mg/dL). Ig and cryglobulin levels and an autoimmune study were all normal. It was decided to admit the patient in order to perform a diagnostic renal biopsy. The differential diagnosis included relapse of mesangial glomerulonephritis IgA, membranous or mesangiocapillary glomerulonephritis caused by the hepatitis C virus, chronic graft nephropathy or acute secondary rejection on treatment of interferon. The renal biopsy revealed acute humoral rejection with C4d+, and Ab anti-HLA levels were positive (22%) against the donor. It was decided to begin treatment with three 250mg 6-methylprednisolone tablets and conversion to tacrolimus. The response to treatment was good, with an improvement of renal function: 150mg/dL urea, 2mg/dL CR and a reasonable decrease in proteinuria (1.2g/24h).