Rapid response to high cut-off haemodialysis and bortezomib therapy in a patient with acute renal failure and plasma cells dyscrasia

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Dear Editor,

Renal involvement is a complication of plasma cell dyscrasias. Electrochemical properties of abnormal light chains are responsible for histological renal pictures. Bortezomib is the first proteasome inhibitor approved for treatment of multiple myeloma and amyloidosis. It prevents the activation of NF-kB that controls the genes encoding IL-6, TNF-alpha and other cytokines and growth factors. Our experience: a 29-year-old woman, suffering from ulcerative colitis successfully treated with sulfasalazine, without renal disease history, was admitted to hospital for acute kidney injury (creatinine 10mg/dL) and anaemia without signs of thrombotic microangiopathy. Serum protein electrophoresis showed a beta-2-monoclonal peak; the serum immunofixation was positive for λ light chains; k- and λ-free light chains (FLC) levels were 37mg/L and 1750mg/L respectively with k/λ ratio=0.02. Microbiological, coagulation and other immunological investigations were unremarkable. The patient started haemodialysis treatment. Renal biopsy revealed a cast-nephropathy picture, negative Congo-red staining, without glomerular deposits; the immunofluorescence showed k light chains but not λ light chains in tubular basement membranes. Abdominal fat biopsy was positive for AL amyloid. Bone marrow biopsy showed 10% of plasma cells infiltration without morphological or cytometric clonality markers; total body CT scan was negative for bone lesions. Because of plasma cell dyscrasia and severe renal involvement, even in absence of a diagnostic definition, was performed a combination treatment of direct removal of FLCs and chemotherapy. Following Hutchison's studies,[1,2] we performed extended haemodialysis (HD) treatment with high cut-off (HCO) dialyzers (Theralite®, Gambro) and bortezomib 1.3mg/m^2 + dexamethasone 20mg/day (days 1-4-8-11) therapy with improvement of renal function (creatinine 1,6mg/dL) and normalization of FLC chains levels (k- and λ-FLC 5mg/dL and 6mg/dL respectively with k/λ ratio=0.85) after the first chemotherapy cycle and 7 HCO-HD. Later, we performed 3 additional cycles with bortezomib + dexamethasone at weekly administration (days 1-8-15-22 for a 35 days cycle) and a peripheral blood stem cells harvest for autologous transplantation program.

Conflict of interest

The authors declare that they have no conflicts of interest related to the contents of this article.

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Eficacia de hemodiálisis de alta permeabilidad en el fracaso renal agudo por vancomicina

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Sr. Director:

Clásicamente se aceptaba que la eliminación de vancomicina con membranas de baja permeabilidad en hemodiálisis (HD) convencional era despreciable (menor de un 5 %). Con las membranas de alta permeabilidad esta circunstancia ha cambiado, lo que entraña conclusiones importantes a la hora de afrontar el tratamiento de su sobredosis. Exponemos un caso de fracaso renal agudo oligúrico secundario a sobredosis de vancomicina resuelto mediante HD estándar con membranas de alta permeabilidad.

Varón de 83 años con hipertensión arterial, diabetes mellitus tipo 2, infarto de miocardio 10 años antes y deterioro cognitivo por enfermedad de Alzheimer, que ingresa por neumonía broncoaspirativa. Recibía tratamiento con amlodipino, metformina, aspirina, repaglinida y risperidona. A su llegada presenta insuficiencia renal moderada prerrenal (creatinina en plasma [Cr]: 1,7 mg/dl; filtrado glomerular estimado por la fórmula MDRD-4 [FGe]: 40 ml/min/1,73 m^2), que tras ser corregida se estabiliza (Cr: 0,95 mg/dl, FGe: 80 ml/min/1,73 m^2), con orina elemental anodina. Precisa tratamiento con furosemida y piperacilina tazobactam. Ante su mala evolución, al quinto día se añade vancomicina en dosis de 0,5 g/12 h intravenoso (13 mg/kg/día). Entre el décimo y el duodécimo día disminuye el volumen de diuresis (200-400 ml/día) y se observa Cr 6,3 mg/dl (FGe: 9 ml/min/1,73 m^2) y orina elemental sugerente de necrosis tubular aguda (NTA). Ecografía Doppler: riñones de tamaño conservado, sin hidronefrosis y con vascularización intrarrenal conservada. Inmunología y serología vírica: ne-