Letter to the Editor

# Multiple myeloma with chronic kidney disease dependent on peritoneal dialysis and autologous stem cell transplant☆

## Mieloma múltiple con enfermedad renal crónica dependiente de diálisis peritoneal y trasplante autólogo de células stem

*Dear Editor,*

Kidney failure related to multiple myeloma and dialysis dependence is a serious complication that worsens survival of these patients. To attempt renal recovery, in addition to chemotherapeutic treatment, different treatment modalities for the removal of light chains have been described, from plasmapheresis to haemodiafiltration with ultrafiltrate regeneration by adsorption in resin (SUPRA-HFR) and extended haemodialysis with a *high cut-off* membrane. To improve survival, this treatment is complemented with an autologous haematopoietic cell transplant (auto-HSCT) in patients <70 years.[1,2]

We present the case of a 53-year-old man, with no relevant relevant history except for regular treatment with non-steroidal anti-inflammatory drugs for a herniated disc. In September 2018, he attended the emergency room with oligoanuria, with a serum creatinine of 20.4 mg/dl, potassium 7.4 mmol/l, calcium 14.8 mg/dl and haemoglobin 11.5 g/dl. Abdominal ultrasound showed kidneys without alterations. Given the acute anuric renal failure, renal replacement therapy was started with conventional haemodialysis, through a temporary femoral catheter. The deferred study of acute renal failure allowed the diagnosis of stage IIIB lambda light chain multiple myeloma, with >3.675 mg/l of lambda chains in serum. Due to the anuric renal failure, possibly related to kidney myeloma, and with the intention improve renal function, the patients was started on extended haemodialysis sessions lasting seven hours, using high-permeability membranes (1100 high cut-off), as a complement to the chemotherapy with bortezomib, dexamethasone and lenalidomide. With the extended haemodialysis, only recovery from diuresis was achieved, although it was ineffective, so a conventional haemodialysis programme was established through a permanent right jugular catheter. He was finally transferred to peritoneal dialysis in January 2019. With chemotherapeutic treatment (after six cycles), complete immunophenotypic remission was achieved.

Seven months later, the patient was admitted for auto-HSCT at our centre. At that time, his residual diuresis remained around 1,500 ml per day, and he was on automated peritoneal dialysis. He received conditioning treatment with melphalan at a dose of 140 mg/m$^2$ and prophylaxis with trimethoprim/sulfamethoxazole, fluconazole and acyclovir.

The procedure was carried out without incident, except for febrile neutropenia, grade III mucositis and lower gastrointestinal bleeding without affecting haematometric indices, which was resolved with desmopressin. Regarding the febrile neutropenia, the patient received antibiotic therapy with piperacillin/tazobactam and daptomycin adjusted to renal function. Given the persistence of fever, he was switched to amikacin, discontinued after two doses due to toxic levels. There were no complications related to the peritoneal dialysis technique, except for a weight gain (5 kg) that was resolved with diuretic treatment with 240 mg of extra furosemide administered orally.

We describe for the first time a case of auto-HSCT being performed in a patient with multiple myeloma and renal disease dependent on peritoneal dialysis, after a partial response with haemodialysis with a high cut-off filter and recovery from diuresis, but with a complete immunophenotypic response to chemotherapy treatment. We also report that such procedure was carried out without major incidents.

Treatment with clearance techniques in multiple myeloma is controversial. In some series, between 60% and 77% of patients recover kidney function thanks to treatment with high cut-off dialysers.[3,4] In our case, only recovery from diuresis was achieved (ineffective), so the patient had to continue with haemodialysis and then be transferred to peritoneal dialysis.

Regarding auto-HSCT in patients with multiple myeloma and renal replacement therapy with peritoneal dialysis, few cases have been described. In several studies, they only make

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up 1–3% of the studied population, without specifying the results or complications presented in this subgroup.[5–7]

The case we are reporting is an example of the safety of auto-HSCT in patients on peritoneal dialysis, without major complications while maintaining complete haematological remission, about 18 months after diagnosis and about 12 months after auto-HSCT.

Furthermore, the survival of patients with auto-HSCT does not differ significantly as compared to that of patients relative to their renal function.[4,5,7] Disease recurrence continues to be the main cause of death in these patients, hence the importance of consolidating treatment with auto-HSCT.[2,5,8]

In summary, despite the lack of studies with large numbers of auto-HSCT in patients on a peritoneal dialysis programme, our experience shows the safety of this treatment in these patients. Given the known results in improving survival, its usefulness should be considered in all patients affected by multiple myeloma with kidney disease on a peritoneal dialysis programme.

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## Conflicts of interest

The authors have no conflicts of interest to declare.

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