P1114 **HA-130 HEMOPERFUSION CARTRIDGE IN THE TREATMENT OF CAST NEPHROPATHY IN A 58-YEAR-OLD MALE WITH MULTIPLE MYELOMA: A CASE REPORT**

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Background and Aims: Multiple myeloma is a plasma cell neoplasm that results in the production of monoclonal immunoglobulin. Renal failure is a common complication of multiple myeloma, occurring in approximately one-half of patients on initial presentation and is associated with increased mortality. Cast nephropathy in particular, is considered to be one of the major mechanisms of renal failure in multiple myeloma, and is characterized by precipitation of free light chains in the distal nephron, leading to intratubular obstruction, inflammation and fibrosis. Recent studies have demonstrated the use of extracorporeal methods such as plasmapheresis and high-cutoff membrane dialysis as an adjunctive therapy to chemotherapy in the management of cast nephropathy, however currently there are no existing guidelines in the use of extracorporeal therapies in the management of complications of multiple myeloma. Hemoperfusion is an extracorporeal treatment technique which utilizes adsorption in the removal of specific toxins. The HA 130 cartridge in particular has a resin pore size distribution of 500Da- 40 KDa and is able to remove molecules at 5-30kDa. In this case report we describe the use of HA 130 hemoperfusion cartridge in the treatment of cast nephropathy in Multiple Myeloma.

Method: A 58-year-old male, diabetic, non-hypertensive came in for 5-day history of generalized body weakness, associated with myalgia, lumbar pain and undocumented fever, with 1-day history of loose stools and vomiting. Upon admission blood tests done revealed anemia with a hemoglobin of 7.8g/dl, creatinine of 9.97mg/dL and potassium of 5.5mmol/L. He was diagnosed with acute renal failure and underwent hemodialysis on the second hospital day. On workup he had lytic bone lesions in the spine, pelvis and cranium on CT scan and x-ray. Serum Protein Electrophoresis (SPEP) and Serum Free Light Chain (sFLC) tests showed a monoclonal gammopathy. Serum beta 2 microglobulin was elevated at 12,618ng/ml. Free kappa and lambda light chains were also elevated at 19,250mg/L and 25.7mg/L, respectively. Bone marrow biopsy was done, with findings of markedly hypercellular marrow with 80% plasma cells confirming the diagnosis of Multiple Myeloma. Combined hemodialysis with hemoperfusion were done using HA 130 filter and hi flux dialyzer for 2.5 hours then hemodialysis for three times a week. Patient was also started on chemotherapy using Bortezomib with Dexamethasone for 2 cycles.

Results: Patient had a total of 14 sessions of combined hemoperfusion with hemodialysis. On repeat free kappa light chains decreased to 212.5mg/L. Patient was maintained on hemodialysis three times a week and was discharged after 55 hospital days. Outpatient hemodialysis was continued three times a week, and after 2 weeks, patient showed signs of renal recovery with a repeat creatinine of 2.1mg/dL. Four weeks after discharge, patient was independent of hemodialysis with a repeat creatinine of 1.3mg/dL.

Conclusion: This report highlights the use of hemoperfusion using HA 130 cartridge in combination with chemotherapy using Bortezomib in reducing free light chain levels in a 58-year-old male that developed renal failure secondary to cast nephropathy. Patient was able to achieve reduction in free light chain levels, improvement in renal function and eventually independence from hemodialysis four weeks after the last hemoperfusion treatment. Further studies using a randomized control trial on the use of hemoperfusion in directly reducing serum free light chain levels is recommended. The value of hemoperfusion on the rate of independence from hemodialysis, as well as survival rates among patients with renal failure secondary to multiple myeloma may also be worth investigating using larger studies.

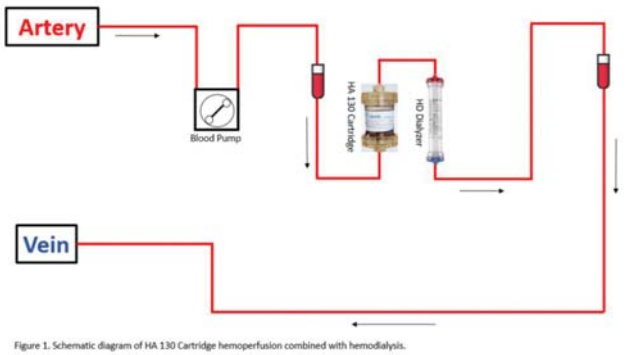

Figure 1. Schematic diagram of HA 130 Cartridge hemoperfusion combined with hemodialysis.

Figure: