PLASMA EXCHANGE (TPE) IN CAST NEPHROPATHY

1987 –

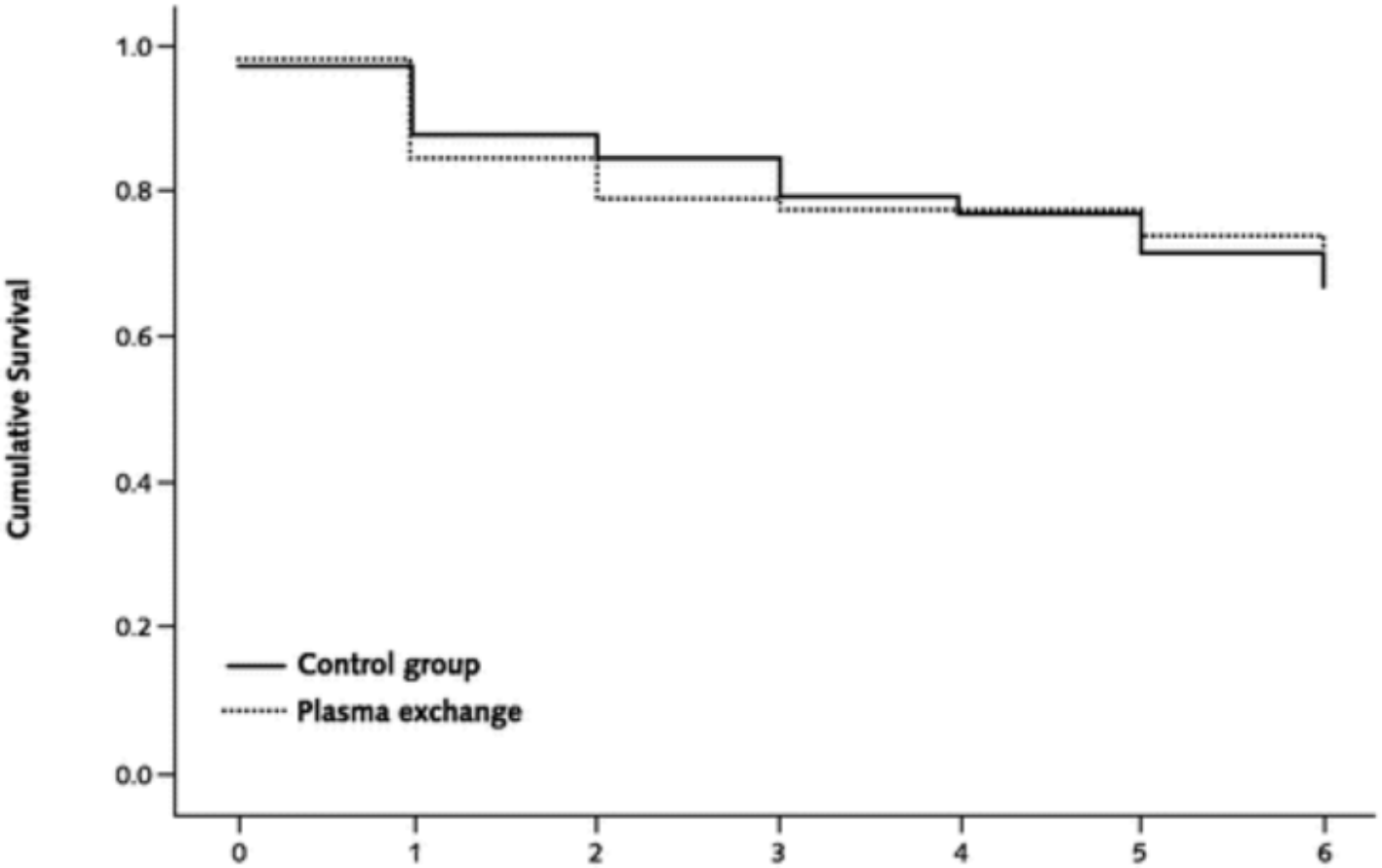
Zucherelli et al report TPE improves renal survival (N = 29)

1990 –

Johnson et al report no difference in renal survival (N = 21)

2005 –

Clark et al report no difference in composite outcome of death, kidney failure, eGFR < 30 (N = 104)



Patients at risk, *n*							
Control group	39	37	34	33	31	30	28
Plasma exchange	58	56	49	46	45	44	42

Clark et al. Annals of Internal Medicine. Dec 2005

High cut-off (HCO) dialysis offers longer treatments, thus increasing flow of light chains from extravascular to intravascular space

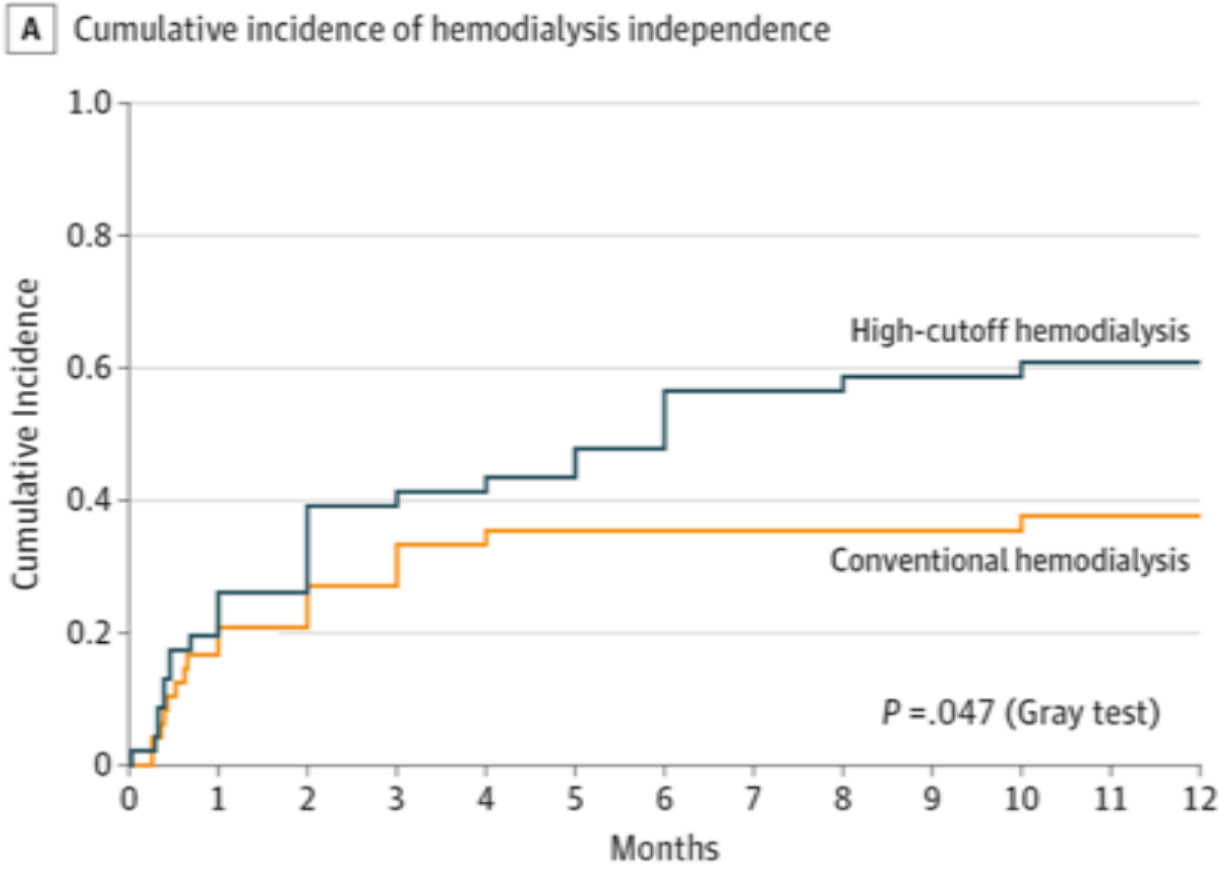
HCO is not widely available in the US

HIGH CUT-OFF HEMODIALYSIS (HCO-HD)

- Patients with dialysis-dependent AKI due to biopsy-confirmed cast nephropathy were randomized to bortezomib-based chemo + either conventional hemo or high cut-off hemo

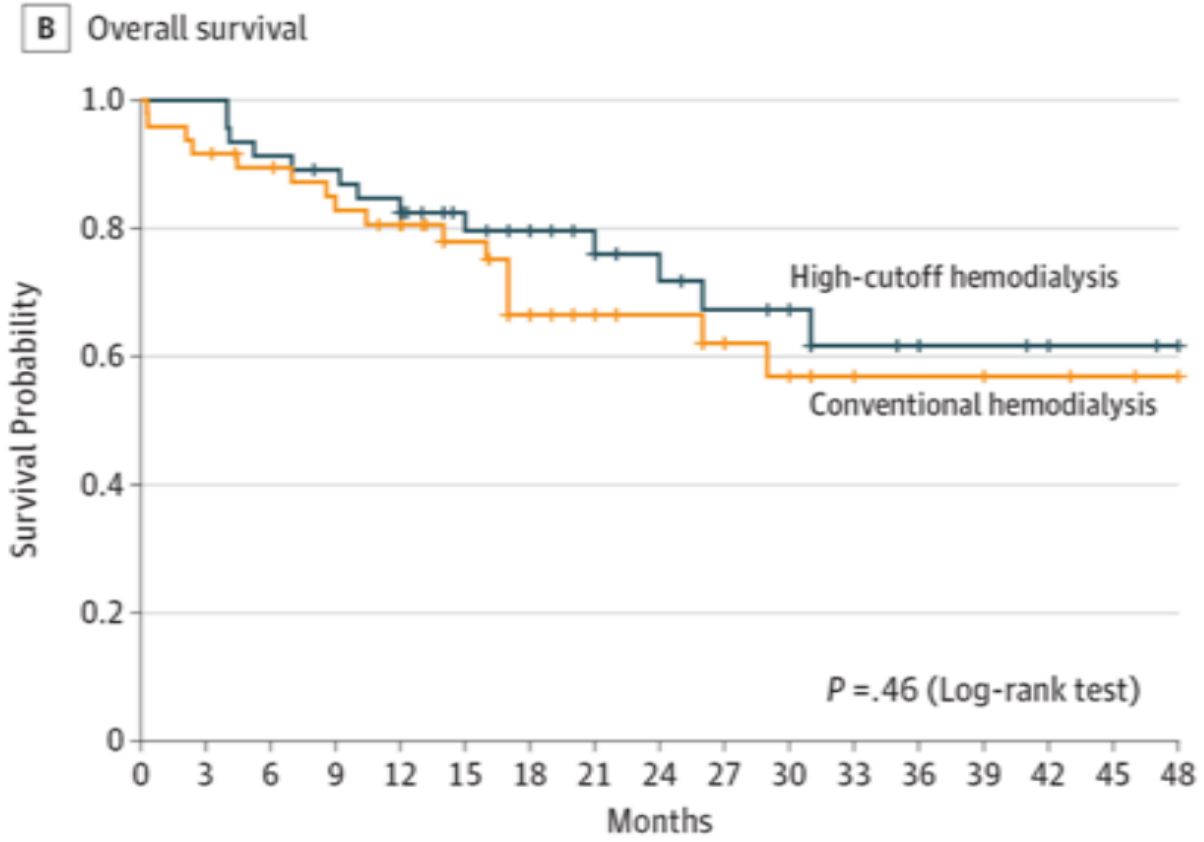
- MYRE study: more patients in the HCO-HD arm were independent of dialysis at 6 months and 12 months

- EuLITE study: no difference in kidney recovery at 3 months. 2-year follow-up, no difference in eGFR after renal recovery



No. at risk				
High-cutoff hemodialysis	46	28	22	14
Conventional hemodialysis	48	31	26	21

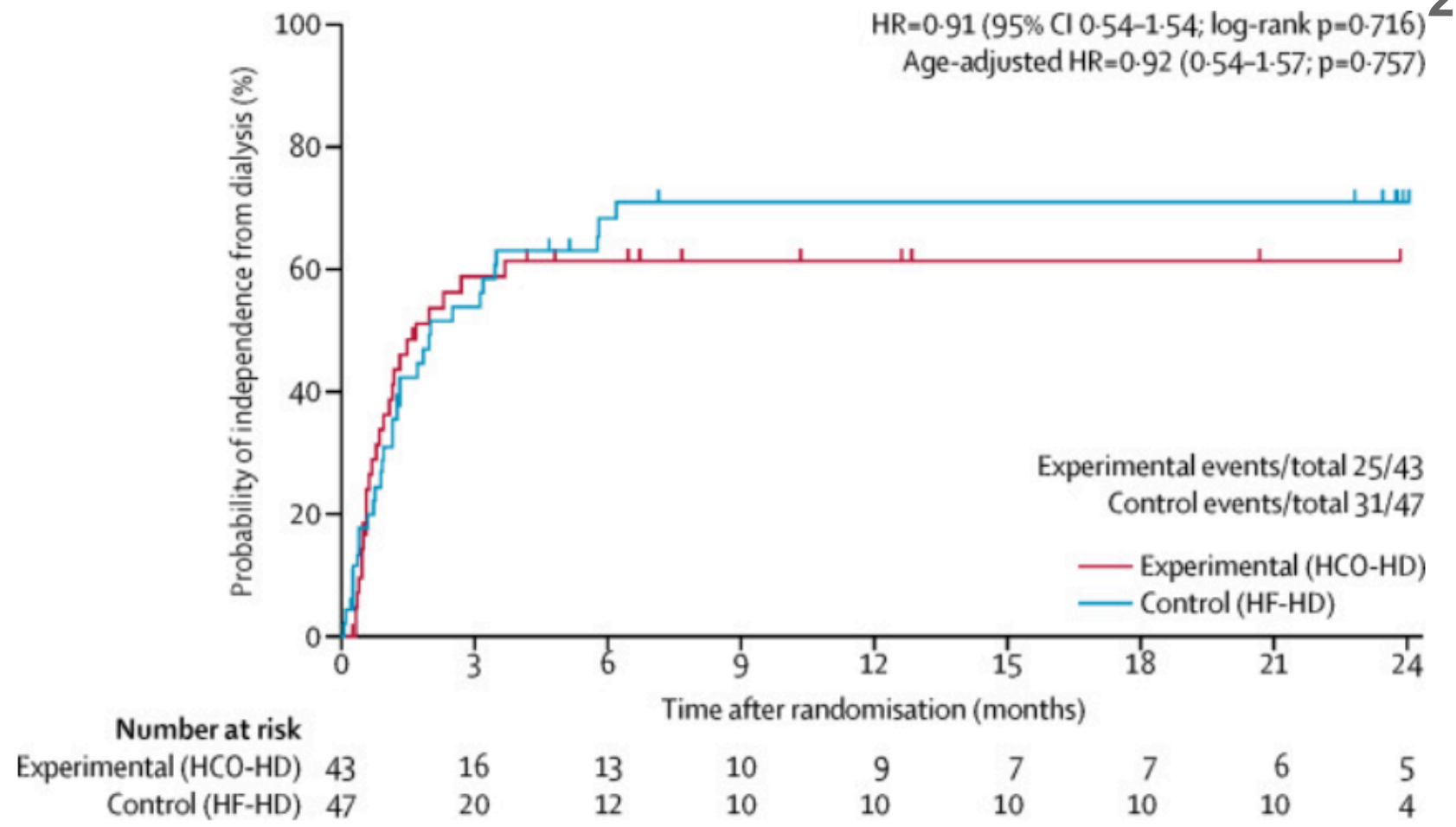
Bridoux et al, JAMA 2017



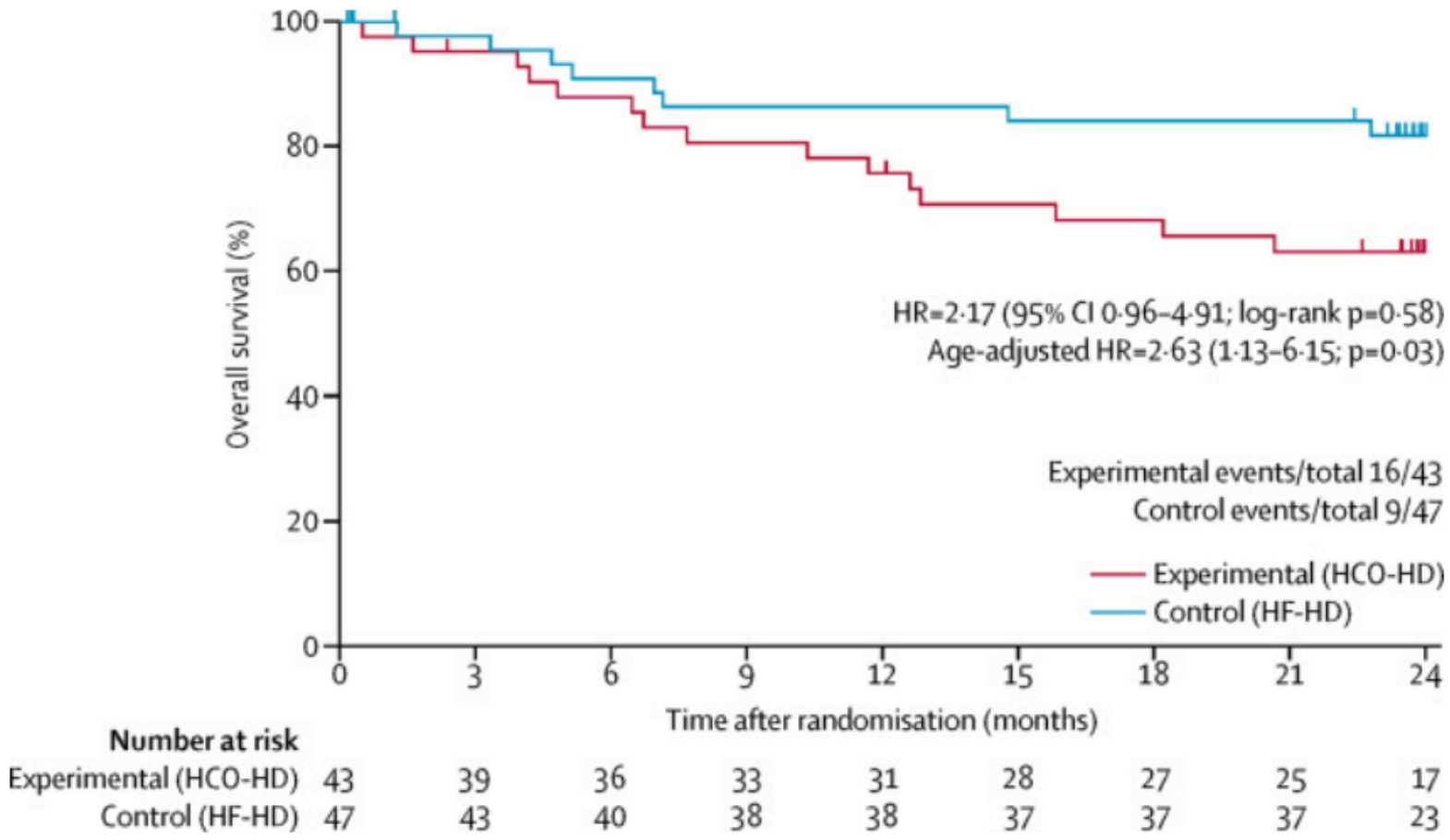
No. at risk

High-cutoff hemodialysis	46	46	42	40	38	29	25	22	18	15	14	10	9	8	7	6	5
Conventional hemodialysis	48	44	41	38	35	28	22	17	15	13	11	8	7	7	6	5	4

Bridoux et al, JAMA 2017



Hutchison et al. Lancet April 2019



Hutchison et al. Lancet April 2019

KIDNEY TOXICITY OF ANTI-MYELOMA DRUGS

Drug	Kidney Side Effect	Dosing in CKD	Dosing in Dialysis
Bortezomib	**RARE.** Reports of Thrombotic Microangiopathy	Dose reduce if GFR < 20ml / min	Dose after dialysis. Consider dose reduction.
Carfilzomib	Acute injury (inc. ATN), Thrombotic microangiopathy	No adjustment	Dose after dialysis
Cyclophosphamide	Hemorrhagic Cystitis, Hyponatremia	No Dose Reduction	Dose after hemodialysis, reduce dose by 50%
Pomalidomide	Acute injury, Crystal nephropathy	Avoid in GFR < 45	No data
Lenalidomide	Acute injury,Fanconi, glomerular disease	10mg daily for GFR 30 - 60 15mg every other day for GFR < 30	5mg daily after HD
Melphalan	Acute injury, hyponatremia	15% dose reduction for GFR > 46 25% dose reduction for GFR < 45	Limited data

Wanchoo et al. CJASN. 2017

KIDNEY TOXICITY OF ANTI-MYELOMA DRUGS

Drug	Kidney Side Effect	Dosing in CKD	Dosing in Dialysis
Daratumumab	None reported	No dosage adjustment is necessary.	No dose adjustment
Isatuximab	No significant side effect noted	No dosage adjustment is necessary.	Limited data
Elotuzumab	AKI	Dosage adjustment is not likely necessary	No dose adjustment
Melflufen	AKI	No dose adjustment for eGFR >45	Limited data
Belantamab	AKI	No dose adjustment for eGFR >30	Limited data
Idecabtagene vicleucel (Abecma)		No dose adjustments in manufacturer's labeling	

Risk of kidney injury is

Allogeneic SCT (21%)

<

Autologous, non-myeloablative SCT (40%)

<

Autologous, myeloablative SCT (69%)

Schrier et al. Nephrology Dialysis and Trans. 2005

Previously, stem cell transplant was associated with increase risk of toxicity in patients with severe kidney impairment

Recent studies have shown that improvements in treatment and melphalan-dose reduction have lead to better tolerated treatment

Up to 1/3 of patients with severe kidney impairment at time of stem cell transplantation will have improved kidney function post stem cell transplant

Li et al. Bone Marrow Transplantation. Sept 2020

IS KIDNEY TRANSPLANT POSSIBLE FOR MYELOMA PATIENTS ON DIALYSIS?

Kidney transplant is a possible option for select Myeloma patients. This is an evolving field

Treating and managing myeloma is the cornerstone of therapy for the kidney

Avoid medications that can make kidney disease worse (NSAIDs – Advil, motrin, ibuprofen, Aleeve)

Avoid dehydration. Drink to thirst – around 2 to 2.5 L per day for patients without heart and liver disease.

WHAT IS A GOOD DIET FOR THE KIDNEYS?

Low sodium (less than 2.5 grams of sodium per day)

High in fruits and vegetables

Protein restriction (0.8 mg / kg of body weight)

If you have chronic kidney disease, your doctor will advise you on specific changes (phosphorus, potassium, calcium) based on your laboratory tests

1. What is my GFR and creatinine?
2. Do I have light chains in the urine?
3. Do I have blood and/or protein in the urine?
4. Are any of my medications kidney-toxic?

ADDITIONAL RESOURCES & ORGANIZATIONS

National Kidney Foundation

- www.kidney.org

Leukemia & Lymphoma Society

- Information on Myeloma: https://www.lls.org/disease-information/myeloma
- Other helpful organizations: https://www.lls.org/support/other-helpful-organizations/blood-cancer-general-information/myeloma

National Cancer Institute

- https://www.cancer.gov/types/myeloma

KEY TAKEAWAYS

1. Kidney disease in Myeloma can present without any symptoms
2. Kidney disease in Myeloma can be reversible
3. Not every patient with Myeloma will get kidney disease

QUESTIONS?

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QUESTIONS?

LEUKEMIA & LYMPHOMA SOCIETY®

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