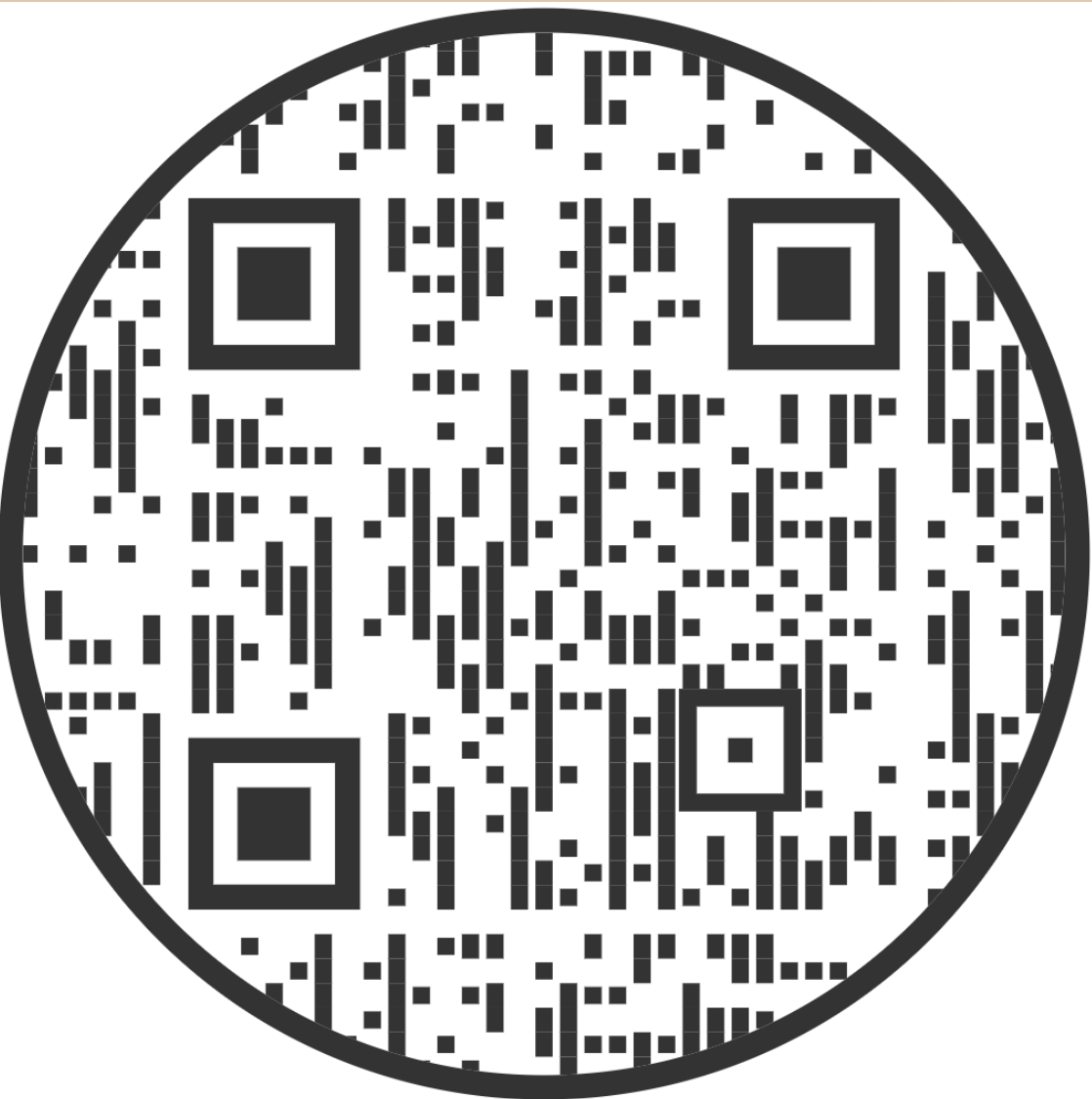


Early vs Late Referrals to Nephrology and its Effect on Patient Outcomes in End-Stage Renal Disease (ESRD) Patients Who Are on Renal Replacement Therapy (RRT) a Retrospective Chart Review

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Abstract



What do they kidneys do?
-Filter out toxins and remove excess fluid.

What is chronic kidney disease?
-A decrease in kidney function that can cause a build up of toxins and fluids.

What is end stage renal disease?
-occurs when the kidneys cannot keep up with the demands of the body and the body needs help clearing toxins and fluids.

What is dialysis?
- Artificially cleaning blood and removing fluid outside the body using a machine and filter.

How is kidney disease staged?
-There are 5 stages of CKD. The 5 stages are dependent on a patient’s eGFR (estimated glomerular filtration rate) and urine albumin-creatinine ratio.

Introduction

Problem Statement

The general problem is that patients are not receiving treatment for their kidneys until they are facing dialysis. This project aims to evaluate the effects of early vs late nephrology referrals on mortality and patient outcomes in patients who are on renal replacement therapy.

Screening for CKD

The U.S. Preventative Services Taskforce in 2012 placed screening for chronic kidney disease as inactive and does not give recommendations for screening of CKD.

Current Recommendations

- KDIGO is a global nonprofit organization developing and implementing evidence-based clinical practice guidelines in kidney disease.
- KDIGO recommends referral of patients to nephrology with a GFR of less than 30ml/min, acute kidney injury or abrupt fall in GRF, or a consistent finding of albuminuria

Current Guidelines

Prognosis of CKD by GFR and albuminuria category				Persistent albuminuria categories Description and range		
Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol
GFR categories (ml/min/ 1.73 m ²) Description and range	G1	Normal or high	≥90			
	G2	Mildly decreased	60-89			
	G3a	Mildly to moderately decreased	45-59			
	G3b	Moderately to severely decreased	30-44			
	G4	Severely decreased	15-29			
	G5	Kidney failure	<15			

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red, very high risk.

Project Description and Design

- Retrospective chart review of demographic and health outcome data retrieved through a patient’s EHR
- Quantitative data was retrieved from a chart review.
- The patients first were categorized into stages based on the KDIGO guidelines
- Second data was collected
- Data was then statistically analyzed using descriptive statistics.
- Data calculated using an excel spread sheet to calculate central tendencies specifically average.

Target Population and Sample

- Target population: a convenience sample of 55 adults
- Patients have ESRD and who receive renal replacement therapy at one outpatient dialysis center
- Older than 18 years of age
- Inclusion criteria: would be patients who have developed ESRD from chronic health conditions.
- Exclusion criteria: genetic and autoimmune disorders causing ESRD and Patients diagnosed with acute kidney injury.
- limitations to this number was the cause of the patients ESRD and limitations of the electronic health records. The total number of patients available for review was 55. This could be considered a limitation to the project as well.

Significance to the Profession

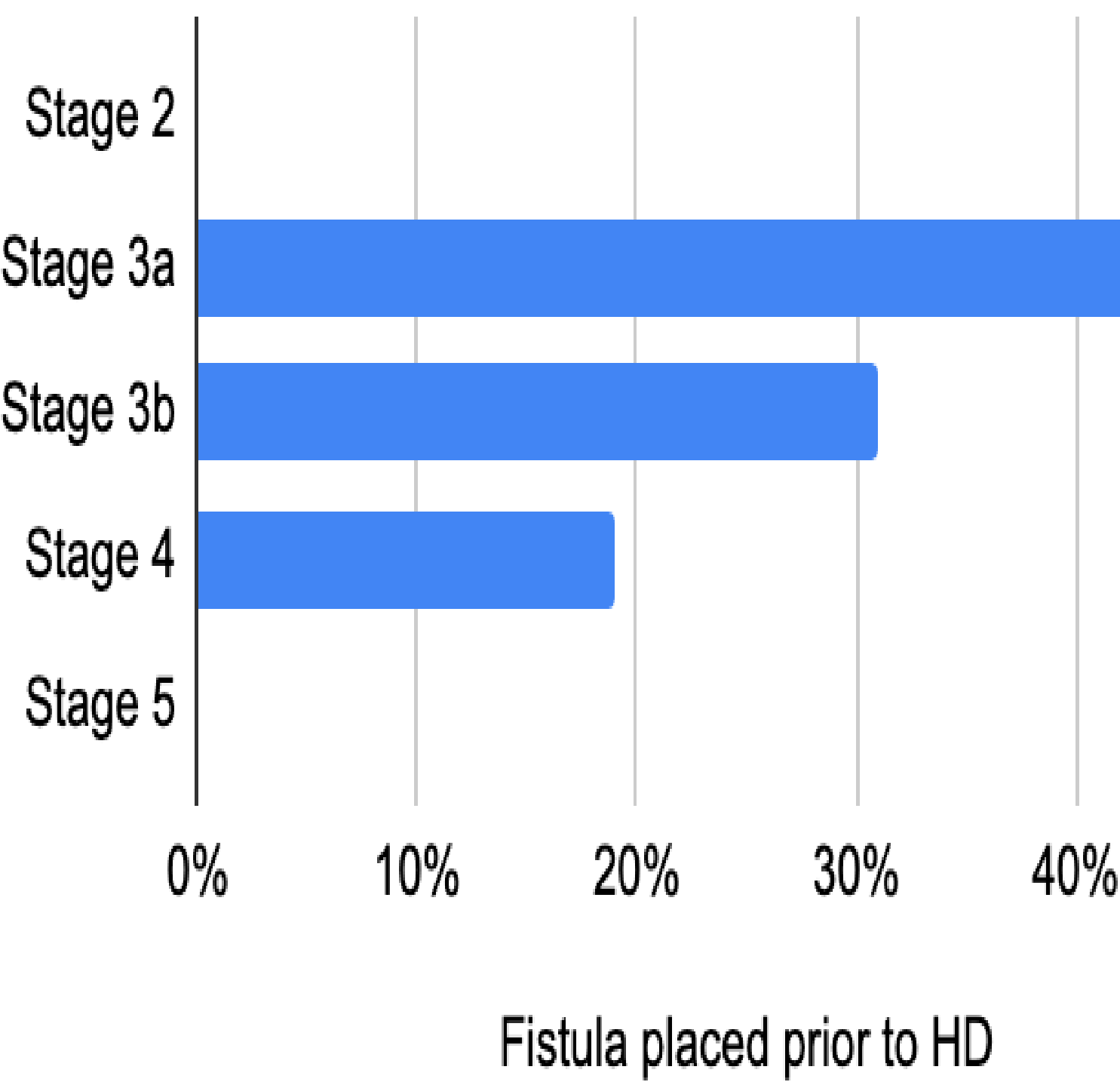
- Kidney diseases are a leading cause of death in the United States.
- About 37 million US adults are estimated to have CKD, most are undiagnosed.
- 40% of people with severely reduced kidney function are not aware of having CKD.
- Every 24 hours, 360 people begin dialysis treatment for kidney failure.
- In the US, diabetes and Hypertension are the leading causes of kidney failure 3 out of 4 cases.
- In 2019, treating Medicare beneficiaries with CKD cost \$ 87.2 billion and ESRD cost \$ 37.7 Billion

Outcomes Reviewed

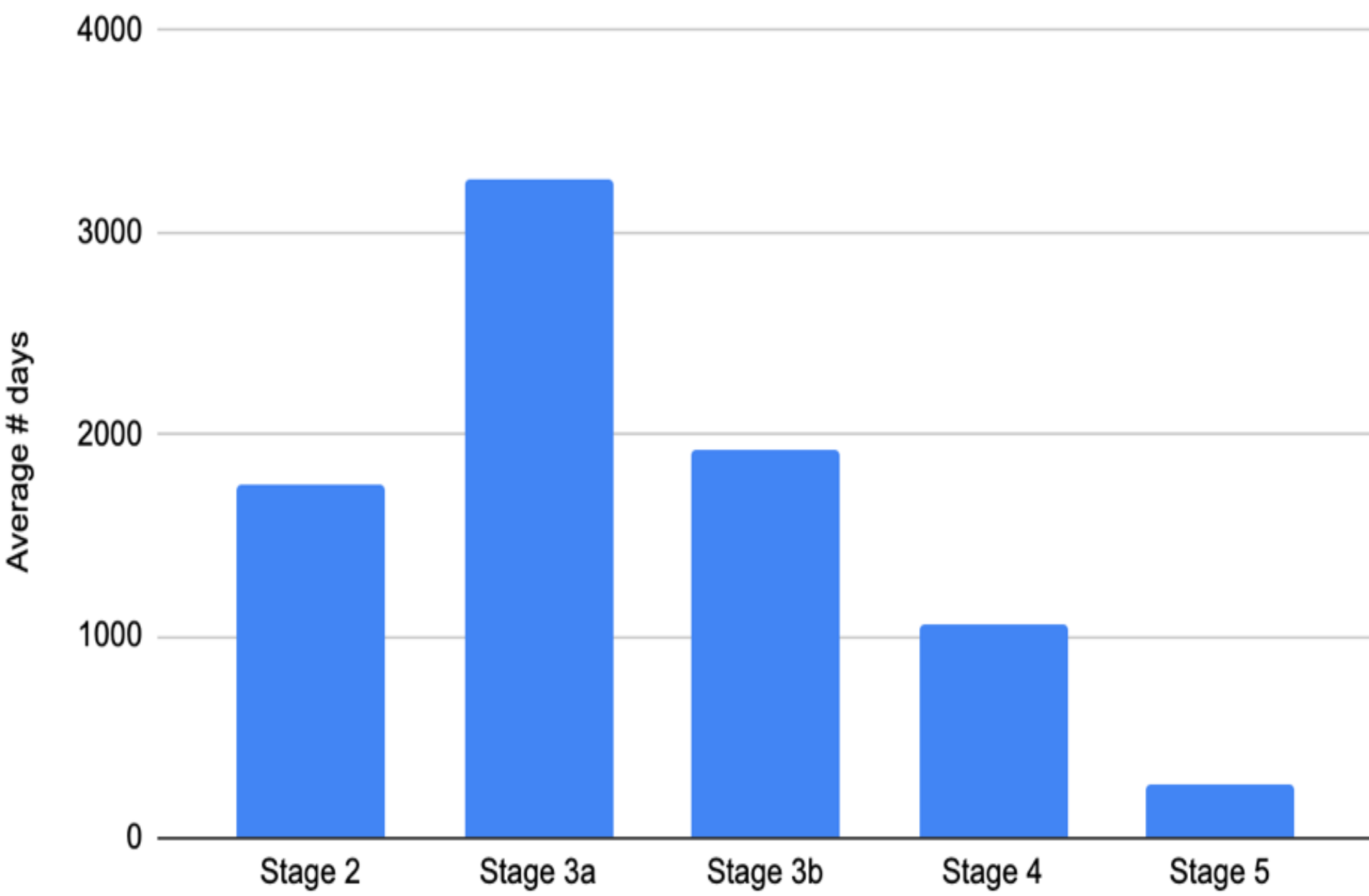
Stage	# of patients	Average # days	Emergent	Controlled Hypertension	Fistula placed prior to HD	Average BUN	Average Hemoglobin	Average Creatinine	Average Phosphorous	Average Potassium	Mortality rate
2	1	1749	100%	0%	0%	33	8.3	4.1	3.1	4	0%
3a	4	3262	75%	100%	50%	66	9.8	6.6	5	4.3	0%
3b	29	1927	69%	76%	31%	58	10	4.2	4.7	4.7	20%
4	16	1057	88%	68%	19%	70	9.8	5.1	5	4.7	25%
5	5	265	100%	20%	0%	58	9.8	6.5	4	5.1	0%

Outcomes Reviewed (Cont.)

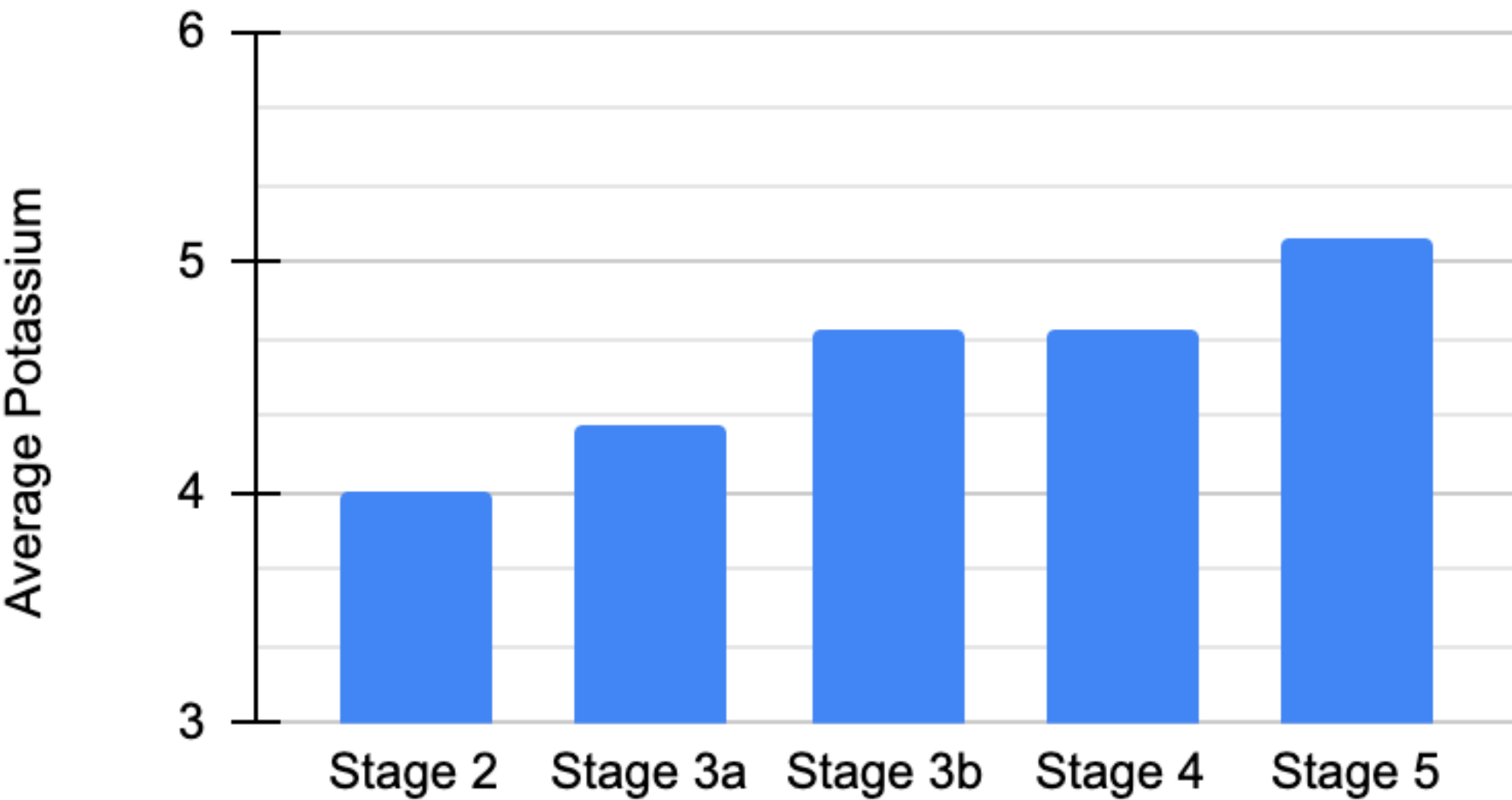
Fistula placed prior to HD



Average Number of Days to Dialysis



Average Potassium



Conclusions and Recommendations

- Clear correlation between earlier nephrology referrals and improved patient outcomes.
 - Improved outcomes include:
 - Blood pressure control
 - Decrease in potassium levels
 - Decrease in time prior to having to start HD
- Patient outcomes are improved when they start following with a nephrologist early in their diagnosis.
- Given the evidence presented patients should be referred to a nephrologist when a patient is approaching a stage 3a
 - Patient and Provider Education is Key
- In the future these recommendations could be used to develop educational programs for primary care physicians regarding patients with chronic kidney disease.

References

