

Chronic Kidney Disease

Preserving Kidney Function

CHRONIC DISEASE SYMPOSIUM OCTOBER 2019

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NEPHROLOGY

Learning Objectives

Recognizing CKD

Testing for CKD

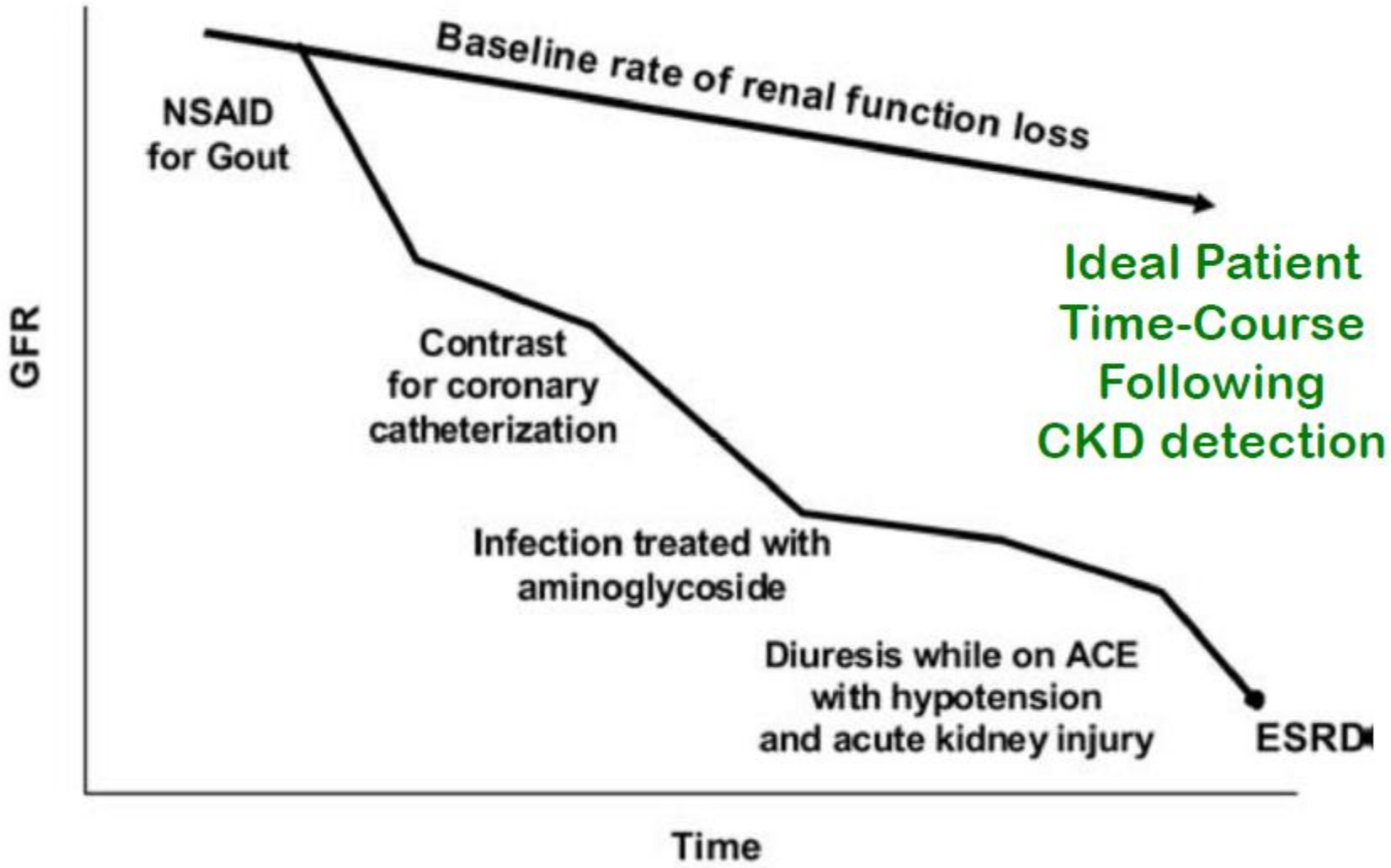
Staging of CKD

Manage risk factors

Timely referral

Renal replacement therapy

CKD is part of primary care



Recognizing CKD

Structural abnormalities

Functional abnormalities

>3 months duration






Testing for CKD

- Chem 7 to check for elevated serum creatinine and more importantly eGFR
- Urinalysis
 - Urine spot protein, albumin creatinine
 - Urine for blood, RBC's or casts
- Renal and bladder ultrasound

eGFR and sCr Comparison

Age	Weight in lbs Height in Ft/in	Sex	Race	SCr mg/dl	eGFR ml/ min per CKD-EPI
25	285 6'	M	AA	1.6	68
49	180 5'4''	F	Hispanic	1.6	38
67	155 5'8''	M	Asian	1.6	44
92	98 5'1''	F	Caucasian	1.6	28

Staging of CKD

120		Stage 1
90		Stage 2
60		Stage 3
30		Stage 4
15		Stage 5
0		

**Prognosis of CKD by GFR
and Albuminuria Categories**

				Albuminuria categories		
				Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
				GFR categories (mL/min/1.73m ²) Description and range	G1	Normal or high
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.						
KDIGO 2012						

Symptoms of CKD

- Stages I to early IV no specific symptoms
- Late stage IV and stage V:
 - Fatigue
 - Loss of appetite, weight loss, metallic taste
 - Decreased UOP, fluid overload, edema, SOB
 - Mental status changes, neuropathy, asterixis

Managing Risk Factors

Modifiable risk factors

Non-modifiable risk factors

- Race
- Age
- Family history of CKD/ESRD

Slowing CKD Progression by Managing the Modifiable Risk Factors

Weight loss and healthy lifestyle

Lower high blood pressure

Keep blood-sugar levels under control if diabetic

Smoking cessation

Reduce salt intake

Avoid NSAIDs, a type of painkillers

Moderate protein consumption

Slowing CKD Progression: ACEi/ARB

- Check labs after initiation.
 - If less than 25% SCr increase, continue and monitor.
 - If more than 25% SCr increase, stop ACEi and evaluate for RAS.
- Continue until contraindication arises, no absolute eGFR cutoff.
- Better proteinuria suppression with low Na diet and diuretics.
- Avoid volume depletion.

Timely Referral to Nephrology

Different opinions

Abnormal renal function, structure or anatomy

ARF or rapid progression of CKD

Refractory HTN on 4 or more meds

Persistent electrolyte abnormalities

Recurrent or extensive nephrolithiasis

Hereditary kidney disease

Case Question 1

A 55 year-old Caucasian-American man, with a history of type 2 diabetes (15 years), hypertension (3 years) dyslipidemia (5 years) and cardiovascular disease (myocardial infarction 3 years ago). He was recently diagnosed with CKD. His most recent labs reveal an eGFR of 45 ml/min/1.73m² and an ACR of 38 mg/g. Which of the following should be avoided?

- A. ACE and ARB in combination
- B. Daily low-dose aspirin
- C. NSAIDs
- D. Statins
- E. A and C

Case Question 2

All of the following adult patients should be referred for nephrology consultation, EXCEPT?

A. Initial visit: eGFR 26 & 3 months later: eGFR 28 (mL/min/1.73m²)

B. Initial visit: eGFR 55, & 3 months later: eGFR 43 confirmed with repeat eGFR 45 (mL/min/1.73m²)

C. Initial visit: ACR 450 & 3 months later: ACR 355 (mg/g) on both dates the eGFR >60 mL/min/1.73m²

D. Initial visit: eGFR >60 & 3 months later: eGFR >60 (mL/min/1.73m²) with personal history of Autosomal Dominant Polycystic Kidney Disease

E. Initial visit: eGFR 42 & 3 months later: eGFR 44 (mL/min/1.73m²) on both dates the ACR <30 mg/g

Indications for RRT

Acidosis

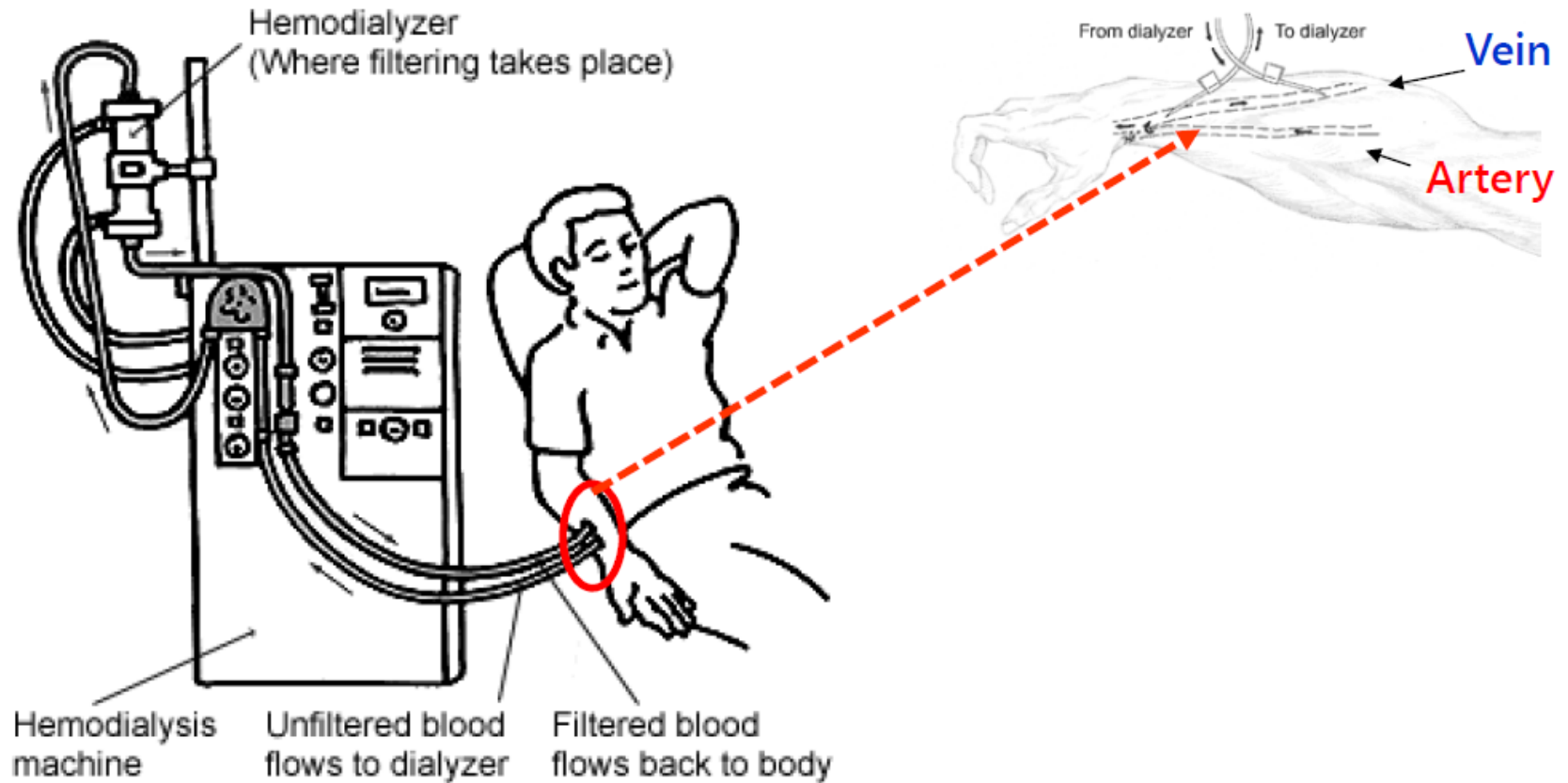
Electrolyte abnormalities

Intoxication

Overload (fluid)

Uremia

Principle of Hemodialysis

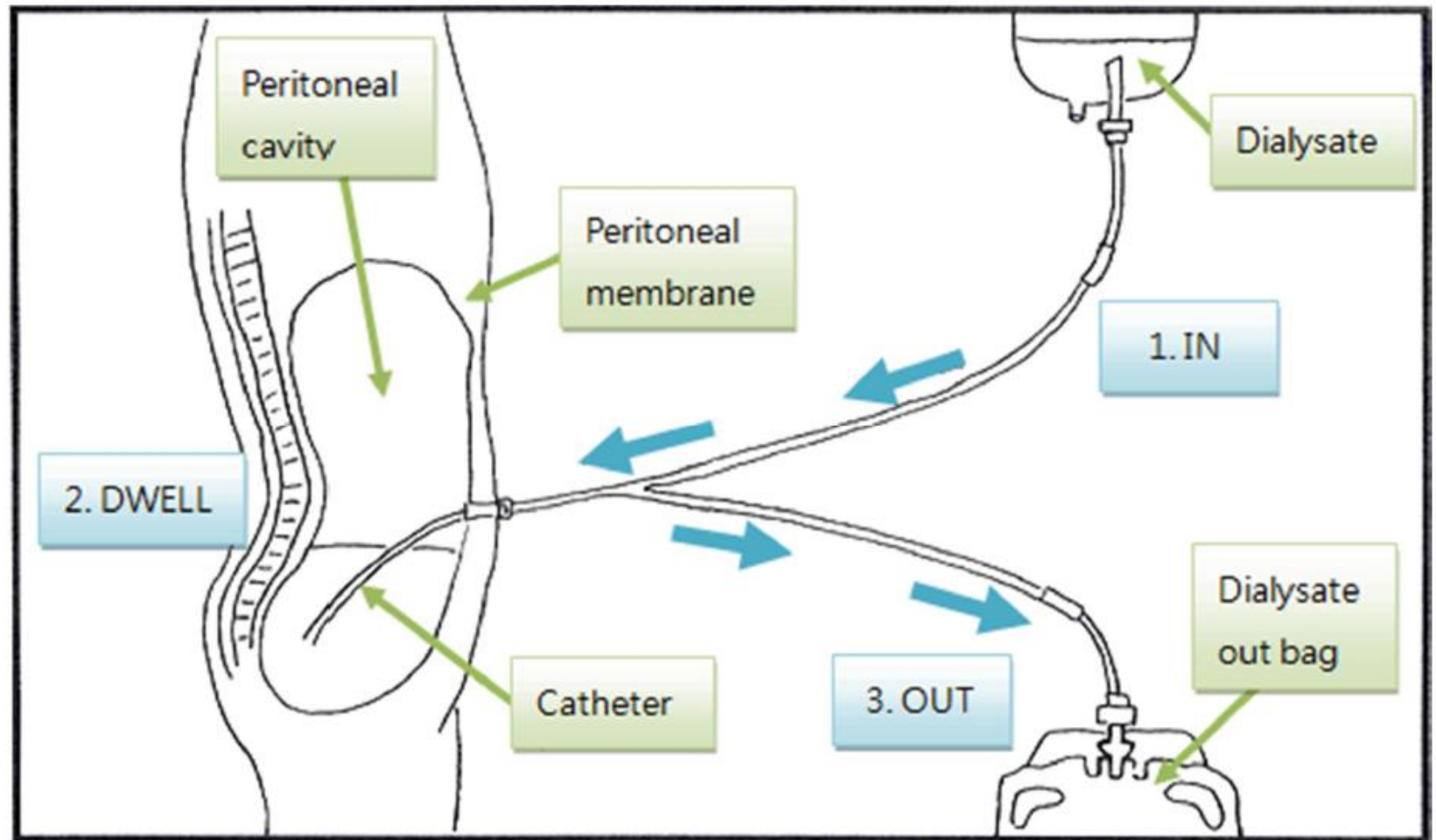


SAVE the Non-Dominant ARM for Vascular Access

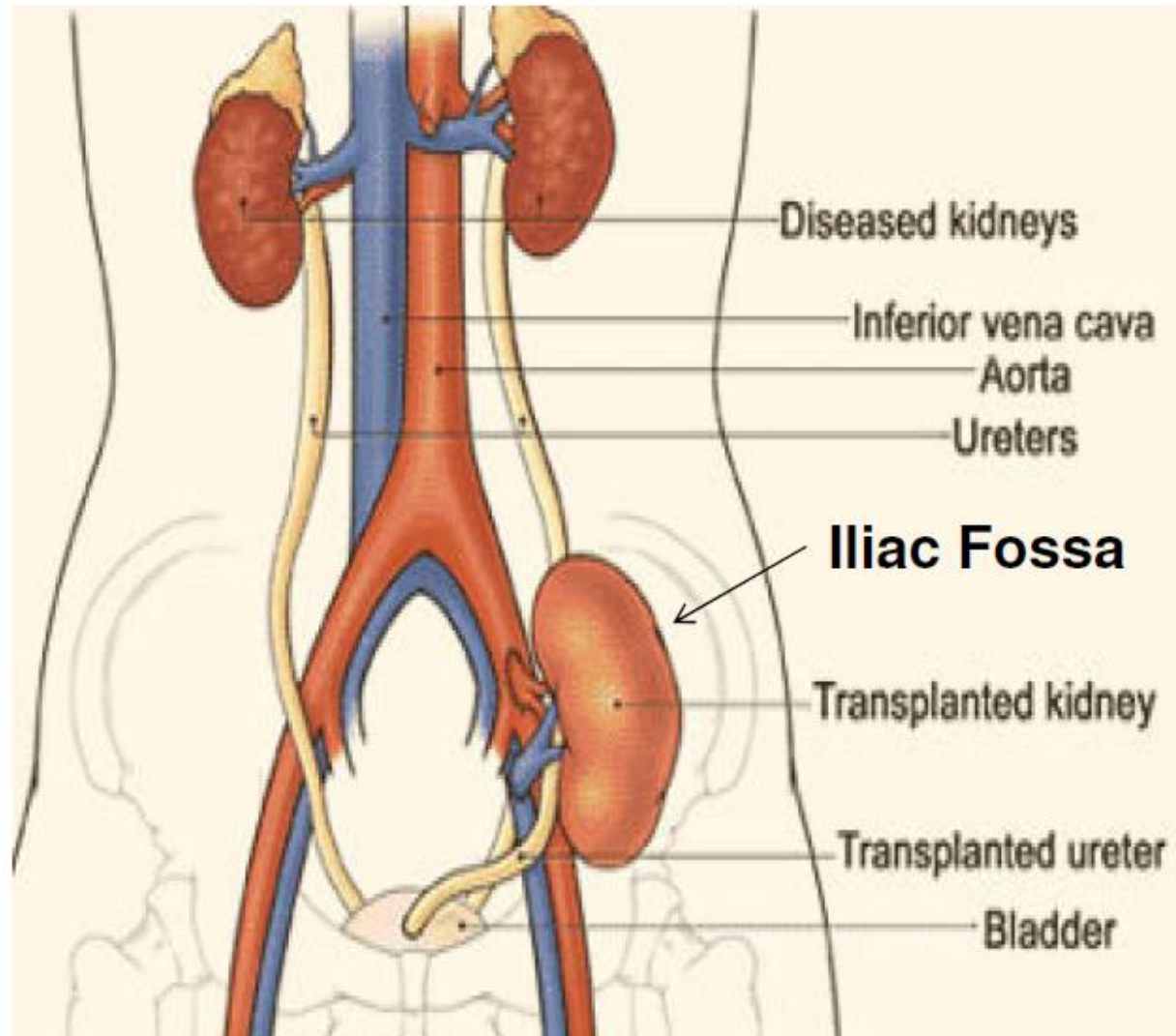
- When GFR < 30 mL/min/1.73m²
 - No BP measurement
 - No IV
 - No Blood Draws
- Place vascular access within a year of hemodialysis anticipation...

***On Non-Dominant
Arm***

Principle of PD Treatment



Principle of Kidney Transplantation



Kidney Transplant

- Kidney transplantation is the most cost-effective modality of renal replacement.
- Transplanted patients have a longer life and better quality of life.
- Early transplantation (before [pre-emptive] or within 1 year of dialysis initiation) yields the best results.
- Living donor kidney outcomes are superior to deceased donor kidney outcomes.
- Early transplantation is more likely to occur in patients that are referred early to nephrologists.
- Refer for transplant evaluation when eGFR ≤ 20 mL/min/1.73m².

Summary

CKD is a very common and costly disease

CKD is a progressive disease; everyone with CKD will end up on dialysis unless they die before that

CKD is easy to diagnose with a chem 7, urine labs and a renal US

Healthy lifestyle can slow down the progression

Early referral leads to a much better and smoother transition from CKD to ESRD

Home dialysis is MUCH superior to in-center dialysis

Kidney transplant is the ultimate treatment for ESRD.

Thank you ...

Call or text me any time: **412-657-0269**