Renal Failure – Update in Treatment – Part 1

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CO-MANAGEMENT OF CKD

- DISCLOSURES – NONE
- OFF LABEL USE – POSSIBLY
- LEARNING OBJECTIVES – USE EXAMPLES FOUND IN EVERYDAY PRACTICE TO BETTER UNDERSTAND HOW TO MANAGE YOUR PATIENTS USING YOUR CONSULTANTS
- UPDATE ON RECENT CHANGES IN HEALTH CARE ie ESRD AS THE ONLY DISEASE WITH IT’S OWN MEDICARE PROGRAM
CO-MANAGEMENT OF CKD

- Estimating renal function, the “true GFR”
- eGFR does not apply to everybody
- The Levy equation comes from the MDRD study which only included patients with established CKD, applying it to everybody who has a Creatinine level drawn may not have the same predictive value
- Nor does the Cockcraft-Gault equation
CO-MANAGEMENT OF CKD

• Q: Which of the drugs interfere with Creatinine excretion?
  • A) cimetidine
  • B) trimethoprim
  • C) cefoxitin
  • D) flucytosine
  • E) all of the above
CO-MANAGEMENT OF CKD

• Q: Which of the following drugs reversibly reduce the GFR?
  • A) ACEI
  • B) ARB’s
  • C) NSAID’s
  • D) contrast
  • E) all of the above, especially in combination or in a dehydrated state
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• A FALSE INCREASE IN THE SERUM CREATININE WILL MAKE RENAL FUNCTION LOOK WORSE THAN IT IS!
• However, all these drugs can also cause allergic interstitial nephritis
• Trimethoprim is one of the leading causes of acute hyperkalemia, along with drugs that actually do decrease renal perfusion
CO-MANAGEMENT OF CKD

- WHAT IS CHRONIC KIDNEY DISEASE?
- A) A SUSTAINED DECREASE IN RENAL FUNCTION OVER SEVERAL MONTHS
- B) ABNORMAL RENAL ANATOMY OR FUNCTION, ie PROTEINURIA, ABN LABS
- SO WE ALWAYS REMOVE POTENTIAL OFFENDING AGENTS AND RECHECK THE PRIOR RESULTS BEFORE LABELLING SOMEONE AS HAVE A CHRONIC DISEASE
- WE GET A RENAL US IF NO RECENT IMAGING IS AVAILABLE
- WE CHECK THE URINE FOR PROTEIN AND CELLS
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• CKD 1 – GFR>90, (5.7% of US population) we see once/year
• ie early DIABETIC NEPHROPATHY
• Cr wnl, no microalbuminuria, BP wnl
• Controversial, but many experts favor low dose ACEI/ARB etc to control hyperfiltration
• early ADPKD, watch for complications such as stones, pyelonephritis. Treat with TMP/SMX or floxins that penetrate cysts
• HCM to control cardiac risk factors and other more likely causes of morbidity and mortality
• For example, pts with ADPKD can have diverticulitis or cysts of the liver and ovaries, rare lineages cerebral aneurysms
CO-MANAGEMENT OF CKD

- CKD 2, GFR 60-89, (5.4% of US population) we see twice a year
- Cr near normal <1.2 in Women, <1.5 in men
- Often will start to see HTN and proteinuria
- Hard to call this CKD with a normal US and UA
- Edema is rarely of renal origin unless nephrotic
- Usually add ACEI/ARB to control BP
- Rigid BP goals remain elusive, especially in the elderly who will never develop end organ damage if they fall and break a hip from low BP!
- Again, microalbuminuria without overt diabetes is a sign of endothelial dysfunction and indicates the need to be treated all cardiac risk factors including smoking
CO-MANAGEMENT OF CKD

- CKD 3, GFR 30-59, we see Q 3-6 months (5.4% of US population)
- We depend on primary care for disease state management & HCM
- We screen with Hb and iPTH, but tend to draw iron studies and Vit D levels only if we find anemia or hyperparathyroidism
- All CKD 3 patients are eligible to see our renal dietician!
- If GFR > 45 anemia may not be of renal origin, although sometimes diabetics can develop this and many women are iron deficient
- We replace iron orally and/or IV as needed before adding ESA’s
- Likewise, if GFR>45 hyperparathyroidism may be primary rather than secondary to renal causes, one clue would be hypercalcemia
- In hyperparathyroidism, we replace Vit D with ergocalciferol or cholecalciferol for several months before adding activated Vit D analogues. Our goal is a 25 OH Vit D level >30 first
CO-MANAGEMENT OF CKD

- CKD 4 GFR 15-29 we see every 2-3 months as ½ will go on to ESRD (only 0.4% of US population)
- MAY PROGRESS RAPIDLY IF PROTEINURIC
- SORRY, BUT WE HAVE TO STOP METFORMIN
- TOPS-TREATMENT OPTIONS (HD/PD/TXP/None)
- MIPPA – EDUCATION RE-RENAL REPLACEMENT THERAPY SUPPORTED BY FEDERAL PROGRAM
- INCREASE DIETARY RESTRICTION OF PROTEIN, ie 0.6-0.8 G/kg/DAY, REMAINS CONTROVERSIAL
- START TO MEASURE PHOSPHORUS, ADD BINDERS
- GFR < 25-30, US FOR VASCULAR ACCESS, JUST VEIN PRESERVATION IF NOT PROGRESSIVE
- GFR < 20-25, TRANSPLANT REFERRAL IF ELIGIBLE
CO MANAGEMENT OF CKD

- WHICH OF THE FOLLOWING BIND DIETARY PHOSPHORUS?
  - A) CALCIUM CARBONATE
  - B) CALCIUM ACETATE
  - C) SEVALEMER CARBONATE
  - D) LANTHANUM CARBONATE
  - E) all of the above plus MAGNESIUM AND ALUMINUM containing antacids

- Note - Calcimimetics are expensive and have very limited use in CKD
CO-MANAGEMENT OF CKD

- Antiproteinuric regimens slow the progression of CKD even in stage 4-5
- Limited by hyperkalemia, though
- ACEI – Gold standard?
- ARB plus renin inhibitors (new combo)
- Spironolactone (or eplerenone)
- Non dihydropyridine CCB (diltiazem or verapamil)
- Likewise, controlling metabolic acidosis with Na bicarb or citrate help slow progression and limit hyperkalemia
- Recent evidence that Vit D analogues do too!
- Nobody can stop the clock, nobody can turn back the hand of time, so if we can slow down the progression of disease by 50% and make the kidneys last twice as long, we’re doing a pretty good job
- Remember, it wasn’t that long ago that we were only able to advise good BP and tight glucose control!
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- NEW AHCCCS REQUIREMENTS BEFORE TXP EVALUATION
- COLONOSCOPY IN LAST 5 YEARS IF AGE > 50
- HbA1c <9 (SOME PLANS 7.5)
- HEP B AND C, HIV TESTING
- PAP SMEAR FEMALES OVER 18 (UNLESS HYSTERECTOMY)
- MAMMOGRAM FEMALES OVER AGE 40
- PSA FOR MALES OVER 50
- CERTIFICATION THAT SLE IS INACTIVE
- EXCLUSIONS – NO LIVER TXP FOR HEP C INDUCED CIRRHOSIS
- NO RE-TRANSPLANT IF FIRST LOST TO NON-COMPLIANCE
- NO ISSUES WITH TOBACCO, ALCOHOL OR DRUGS
- CURRENT H&P WITH HT AND WT (BMI<36-40)
- NO UNTREATED HEART DISEASE, EF>35% (ie NO AICD)
- NO RECENT CANCER (WAITING TIME DEPENDS ON TYPE)
- NO ACTIVE PSYCH ISSUES OR CURRENT INFECTIONS
- THIS ALSO APPLIES TO MEDICARE/AHCCCS PATIENTS
CO-MANAGEMENT OF CKD

• CKD 5, GFR<15, END STAGE RENAL DISEASE
• LATE REFERRAL REMAINS A PROBLEM AND STARTING DIALYSIS WITH A CATHETER IS A MAJOR CAUSE OF MORBIDITY AND MORTALITY
• GUIDELINES SAY- VASCULAR ACCESS SHOULD BE PLACED IF THE PATIENT MAY NEED TO START DIALYSIS IN THE NEXT SIX MONTHS
• PREDICTING THIS IS VIRTUALLY IMPOSSIBLE
• THE POINT AT WHICH DIALYSIS HELPS WITH SYMPTOMS VARIES A LOT
• UREMIC SYMPTOMS BEGIN WITH APPETITE LOSS AND PROGRESS TO AM VOMITING AND EVENTUALLY TO MALNUTRITION
• THIS IS ESPECIALLY TRUE IN DIABETICS, SO THE TREND WAS TO START THEM WITH HIGHER LEVELS OF RESIDUAL RENAL FUNCTION
• THE HOPE WAS TO AVOID MALNUTRITION AND COMPLICATIONS
• HOWEVER, AS IT TURNS OUT, EARLY START MAY BE WORSE FOR MORTALITY
C0-MANAGEMENT OF CKD

• DENIAL IS NOT JUST A RIVER IN EGYPT, BUT VIRTUALLY EVERBODY GETS SYMPTOMATIC WHEN THE GFR FALLS TO BETWEEN 5 AND 10
• LIKEWISE, CONSERVATIVE MANAGEMENT OF HYPERKALEMIA AND METABOLIC ACIDOSIS IS VERY DIFFICULT BEYOND A CERTAIN POINT
• IN ADDITION, MANY PEOPLE SAY THEY’D NEVER GO ON DIALYSIS, THEN CHANGE THEIR MINDS WHEN THEY CAN’T BREATHE
• SO UNLESS SOMEONE HAS AN ACUTE EVENT THAT CAUSES THEIR KIDNEY FUNCTION TO DETERIORATE, WE TRY TO ESTABLISH VASCULAR ACCESS EARLY
• THE ALTERNATIVE OF PERITONEAL DIALYSIS IS UNDERUTILIZED
• BUT WOULDN’T YOU RATHER DO DIALYSIS AT HOME?
CO-MANAGEMENT OF CKD

• PERITONEAL DIALYSIS IS A GOOD BRIDGE TO TRANSPLANT AND A GOOD FIRST CHOICE FOR MANY PEOPLE

• WE TRY TO PUT IN A BACK UP FISTULA IF TRANSPLANT IS NOT IMMINENT

• STATISTICALLY, PEOPLE DO EQUALLY WELL FOR THE FIRST COUPLE YEARS ON EITHER MODALITY, THEN THE STATISTICS START TO DROP OFF FOR WOMEN ON PD

• LIKewise, THERE IS DATA THAT WOMEN, BUT NOT MEN ON HD DO BETTER WITH MORE INTENSIVE DIALYSIS
CO-MANAGEMENT OF CKD

• HOME HEMODIALYSIS IS AVAILABLE TO A LIMITED POPULATION – THOSE WITH GOOD HOME SUPPORT

• MEDICARE ONLY REIMBURSES FOR DIALYSIS 3 TIMES A WEEK WITH FEW EXCEPTIONS, BUT HOME HEMO WITH THE MOST POPULAR SYSTEM NEEDS TO BE DOME 5 TIMES A WEEK DUE TO LOW CLEARANCES

• OUTCOME STUDIES SUGGEST THAT PATIENTS FEEL BETTER, BUT MAY NOT DO ANY BETTER WITH MORE FREQUENT DIALYSIS

• PRESERVING RESIDUAL RENAL FUNCTION MAY BE THE MOST IMPORTANT FACTOR IN HOW WELL PEOPLE DO, ESPECIALLY THOSE ON PD