

# END STAGE RENAL DISEASE OVERVIEW

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- END STAGE RENAL DISEASE (ESRD) IS RENAL FAILURE REQUIRING RENAL REPLACEMENT THERAPY.
  - DIALYSIS: HOME (PD & HD) AND IN-CENTER (HD)
  - RENAL TRANSPLANTATION

# EPIDEMIOLOGY

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- 660,000 Americans with ESRD
- 468,000 on Dialysis
- 193,000 with a Functioning Kidney Transplant
- 57.3 % Males
- 42.7 % Females

# EPIDEMIOLOGY

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- 45 to 64 years old: 44.3 %
- 65 to 74 years old: 22.6 %
- Over 75 years old: 16.3 %
- Less than 44 years old: 17 %

# EPIDEMIOLOGY

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- White: 61.7 %
- Blacks: 38.7 % (only 12 % of total population)
- Hispanics: 16.9 %
- Asian: 5.6 %
- American Indians: 1.1 %

# ETIOLOGY

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- Diabetes: 37.5 %
- High blood pressure: 25 %
- Glomerulonephritis: 16.3 %
- Cystic kidney: 4.7 %
- Other: 16.4 %

# OTHER INFORMATION

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- 6,479 dialysis facilities (2015)
- 617 facilities are hospital based
- 89,000 people with ESRD die annually
- Medicare pending on ESRD: \$ 31 billions annually
- Medicaid and Private health insurance cost not included

# OTHER INFORMATION

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- Annually > 100,000 patients start dialysis
- Number of new patients is increasing (compared to the 80s-90s)
- However total number of dialysis patients is still increasing
- Failing kidney transplants
- People living longer
- Acute Kidney Failure that recover
- Population growth



# TRANSPLANT

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- 93,000 currently on kidney transplant list
- Wait time: 5 years on average
- 16,000 transplants per year
- About 5,000 living donors
- About 11,000 deceased donors

# TRANSPLANT

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- Deceased donor kidney lasts 8 to 12 years
- Living donor kidney: 12 to 20 years

# MORTALITY

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- Dialysis mortality: 20 % first year
- Dialysis survival: 35 % at 5 years
- Leading causes
  - Cardiovascular: sudden death, coronary artery disease, etc...
  - Infections
  - Volume overload

# ELDERLY

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- By 2040: 21% of US population > 65 years old
- By 2050 1 in 20 people > 85 years old
- Currently 25% of patients starting dialysis > 75 years old
- Older patients represent the fastest growing group on dialysis
- Aging directly affect prevalence of chronic disease

# ELDERLY

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- Cardiovascular diseases
- Cancer
- Cognitive impairment (dementia)
- Arthritis and joints replacement
- CKD
- DM
- Osteoporosis

# CHALLENGES IN FRAIL ELDERLY WITH ESRD

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- Cognitive impairment
- Depression
- Falls
- Multimorbidity (> 2 diseases), in > 50% of patients
- Polypharmacy
- Typical ESRD: > 12 medications



# RENAL REPLACEMENT THERAPY

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- HOME BASED: Peritoneal Dialysis (PD) or Home Hemodialysis (HHD)
- Nurse assisted home dialysis (peritoneal or hemodialysis)
- IN CENTER HEMODIALYSIS
- Kidney transplantation



# RENAL REPLACEMENT THERAPY

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- Home based therapy should be offered to eligible patients
- Dialysis access preparation months before dialysis: AV fistula / AV graft
- Proper CKD education to patients and family / care givers
- Early referral to nephrologist

# CONSERVATIVE CARE OF ESRD

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- Definition: care of patients with ESRD without Renal Replacement Therapy
- Who should be offered: patients who are less likely to benefit from dialysis and those who refuse

# CONSERVATIVE CARE OF ESRD

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- Older patients are at risk of:
  - loss of independence
  - diminished quality of life (quantity without quality)
  - poor health in general
  - dialysis may not improve or even worsen these problems

# CONSERVATIVE CARE OF ESRD

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- Symptoms of uremia often overlap with common geriatric syndromes
- Dialysis may lead to increased hospitalizations and functional debility

# CONSERVATIVE CARE OF ESRD;WHO ?

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- Advanced kidney disease in  $> 75$  years old with 2 of the following
  - Impaired functional status
  - Severe malnutrition (albumin  $< 2$  g/dL)
  - Multiple comorbidities
  - Positive response to the surprised question: “No, I would not be surprised... die within the next year”.

# CONSERVATIVE CARE OF ESRD: SURVIVAL

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- Median: 6 months. Range 6 to 23 months
- Survival typically longer in RRT group, however in some subgroups with advanced comorbidities, there was no statistical difference

# CONSERVATIVE CARE OF ESRD: QOL

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- Older patients with advanced or multiple comorbidities who are initiated on dialysis require more medical interventions and more hospitalizations
- Dialysis patients spend 50% of their survived days either receiving dialysis or hospitalized, compared to 5% in those on conservative treatment
- Patients on dialysis experience symptom burden similar to those with cancer

# COMPONENTS OF CONSERVATIVE CARE

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- Medical management of kidney disease
- Symptom management including quality end-of-life care
- Advance care planning



# CONSERVATIVE CARE: MEDICAL MANAGEMENT

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- Minimization of renal disease progression
  - Renin Angiotensin system blockade
  - Limitation of protein intake: 0.8g/Kg/day
  - Blood pressure management: goals unclear for those > 70 years

# CONSERVATIVE CARE: MEDICAL MANAGEMENT

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- Anemia: Hb < 13 g/dL
- Mineral and bone disease: phosphorus binders and vitamin D analogs for pruritus and renal bone disease
- Acidosis: sodium bicarbonate, fruit intake
- Hyperkalemia

# CONSERVATIVE CARE: SYMPTOM MANAGEMENT

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- Anorexia, nausea and vomiting
- Fatigue (anemia and other)
- Edema
- Pruritus

# CONSERVATIVE CARE: SYMPTOM MANAGEMENT

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- Pain
- Depression and Anxiety

# CONSERVATIVE CARE:ADVANCE CARE PLANNING

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- Patients, family members and providers

# IN THE NURSING HOME

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- Proper communication: patients, care givers, PCP, Nursing home, hospitals and Nephrologists
- Frequent reviews/reconciliation of medications
- Medication dosing adjusted to GFR
- Prevention of CKD progression: treatment of risk factors
- Preservation of residual renal function

# REFERENCES

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- National Kidney Foundation
- US Renal Data Report 2015
- Uptodate
- Medscape
- NIH Report

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- THANK YOU !