# END STAGE RENAL DISEASE AND THE DISCONTINUATION OF DIALYSIS

Dr. Nicki Apostle

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# Disclosures:

- Nil

# CASE STUDY: Mrs. V

- 83 yo F from LTC referred to nephrology for ESRD
- PMhx: Htn, type II DM, Afib, CHF, CVA, CAD with previous MI, dementia, PVD, chronic back pain
- Pt unable to participate in assessment d/t CI
- Family wishes to help her live as long as she can, be symptom free and maintain current QOL

# Objectives:

- Would this patient benefit from incorporating a palliative approach to care?
- Would dialysis impart a survival benefit?
- What symptoms may this patient experience and how can they be effectively managed?
- How can you help in advance care planning?
- If this patient were to forgo or discontinue dialysis what can you expect?
  - The who, how, when and where of discontinuing dialysis

# End Stage Renal Disease:

| Stage | GFR (ml/min) | Description |
|---|---|---|
| 1 | >90 | Normal kidney function, but urine findings, structural abnormalities or genetic trait point to kidney disease |
| 2 | 60–89 | Mildly reduced kidney function, but other findings (as for stage 1) point to kidney disease |
| 3 | 30–59 | Moderately reduced kidney function |
| 4 | 15–29 | Severely reduced kidney function |
| 5 | <15 | End-stage kidney failure (established renal failure) |

GFR = glomerular filtration rate.

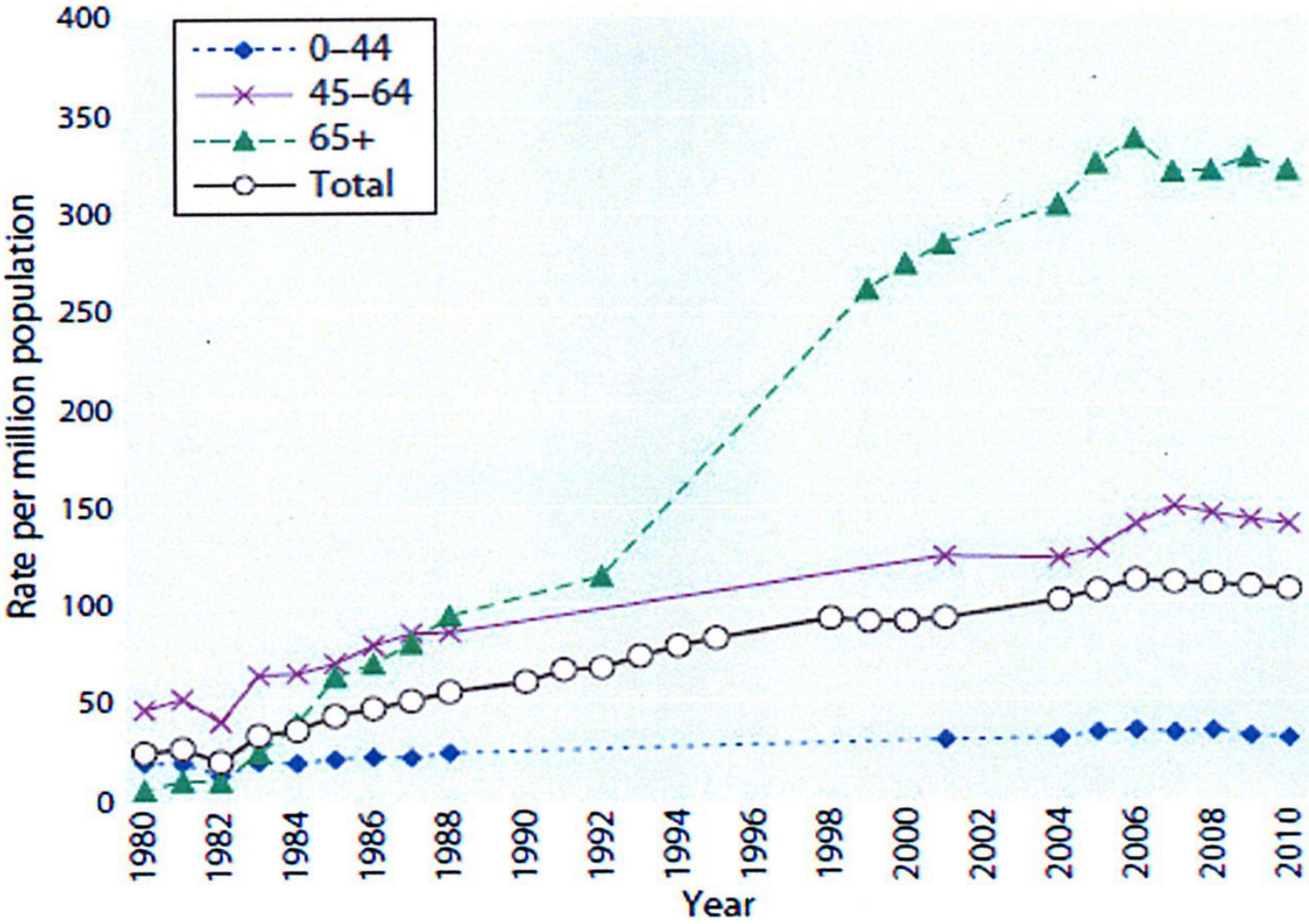
# End-stage renal disease: Epidemiology and Impact

- ESRD is a serious illness with significant health consequences and high-cost treatment options
- # pts with ESRD has increased 3x in Canada last 20 years with largest cohort of incident dialysis patients being > 65yo
- Critical increase easily attributable to increasing prevalence DM and HTN in an already aging population

# End-stage Renal Disease: Epidemiology and Impact

- Result is a large subpopulation of unwell, frail, elder dialysis pts with high symptom burden and high health care needs
  - 1000 hrs/yr in tx
- Among all dialysis patients, regardless of vintage, yearly mortality is ~25% (>breast, ovarian, prostate, colorectal ca)
- Symptom burden comparable to advanced cancer yet under-recognized and undertreated

**Renal Registry data indicating increasing dialysis take-on rates over time by age group**




**Davison R , and Sheerin N S Postgrad Med J 2014;90:98-105**

# Identifying Patients: Criteria for a Palliative Care Assessment at the Time of Admission

*A potentially life-limiting or life-threatening condition and . . .*

**Primary Criteria**

- The "surprise question": You would not be surprised if the patient died within 12 months
- Frequent admissions
- Admission for difficult-to-control symptoms
- Complex care requirements
- Decline in function, feeding intolerance, or unintended decline in weight

**Secondary Criteria**

- Admission from LTC
- Elderly pt, CI, with acute hip fracture
- Metastatic/incurable cancer
- Chronic home oxygen
- Out-of-hospital cardiac arrest
- Enrolled in PCBP or known to palliative care
- Limited social support
- No history of ACP discussions/documents

# Identifying patients with palliative care needs:

- Goal is early identifications
- Serves as trigger to include a palliative care approach in daily care and consider palliative referral in more complex cases
- High risk patients specific to ESRD include:
  - Pts with ESRD + any high risk factor (primary or secondary criteria)
  - Pts with ESRD who have opted for conservative management
  - Pts with ESRD who are considering discontinuing RRT or have no options for ongoing dialysis access
  - Pts who are unwell or with high symptom burden at the onset of dialysis

# Advanced Care Planning: What?

- Process of shared reflection, discussion and decision making for purpose of clarifying values, tx preferences, and goals of care
- Dynamic process requiring constant reassessment
- Patient-centered approach to individualize care
- Uses open-ended questions to get to know pt
- Provides outcome data + personal opinion
- Ultimate decision for dialysis lies with medical team in taking best interest of pt into account

# Advanced Care Planning: Open-ended question

- What do you understand about your illness?
- How much do you want to know?
- Given the severity of your illness, what are your biggest concerns? Hopes? Fears?
- What is your quality of life like now?
- How do you view balancing quality of life with length of life?
- Have you considered circumstances in which you would want to stop dialysis?

# Advanced Care Planning: Why?

- Advanced care planning has been show to:
  - Increase pt/family satisfaction with care
  - Increase likelihood that pt's wishes will be upheld
  - Increase hospice use, reduce hospitalization, reduce costs
  - Decrease stress, anxiety, and depression in surviving relatives

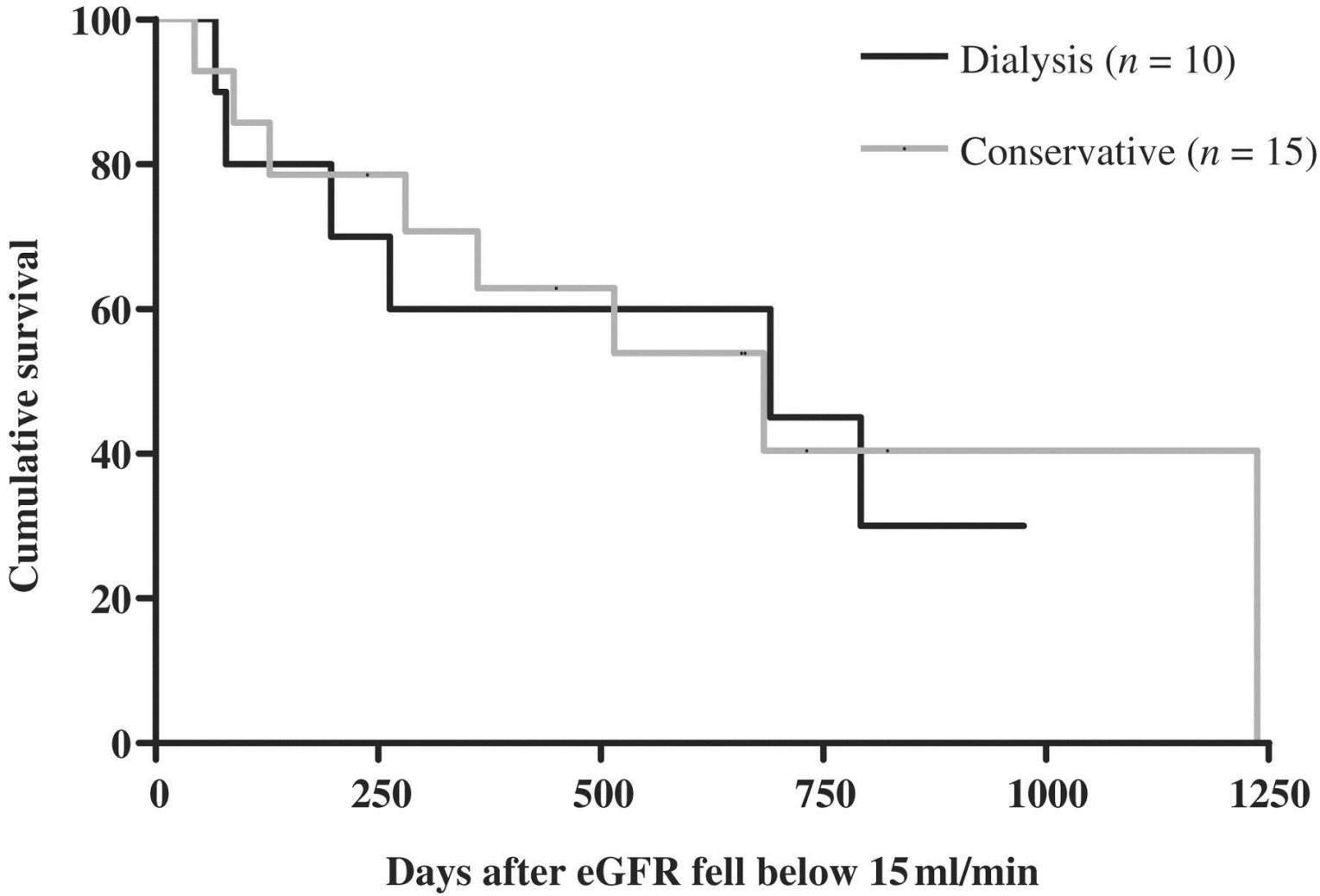
# Advanced Care Planning: Why?

- Only 13-35% pts with ESRD complete ACD
- 61% pts regret decision to start dialysis
- ~73% pts on dialysis have significant or moderate CI
- 50-80% who discontinue dialysis are incompetent at the time of decision
- 1-time survey of 100 Canadian pts during an initial visit to a nephrology clinic reported that 97% of pts wanted explicit information on prognosis yet over 90% had no such conversation

# Advanced Care Planning in ESRD: Providing outcome data

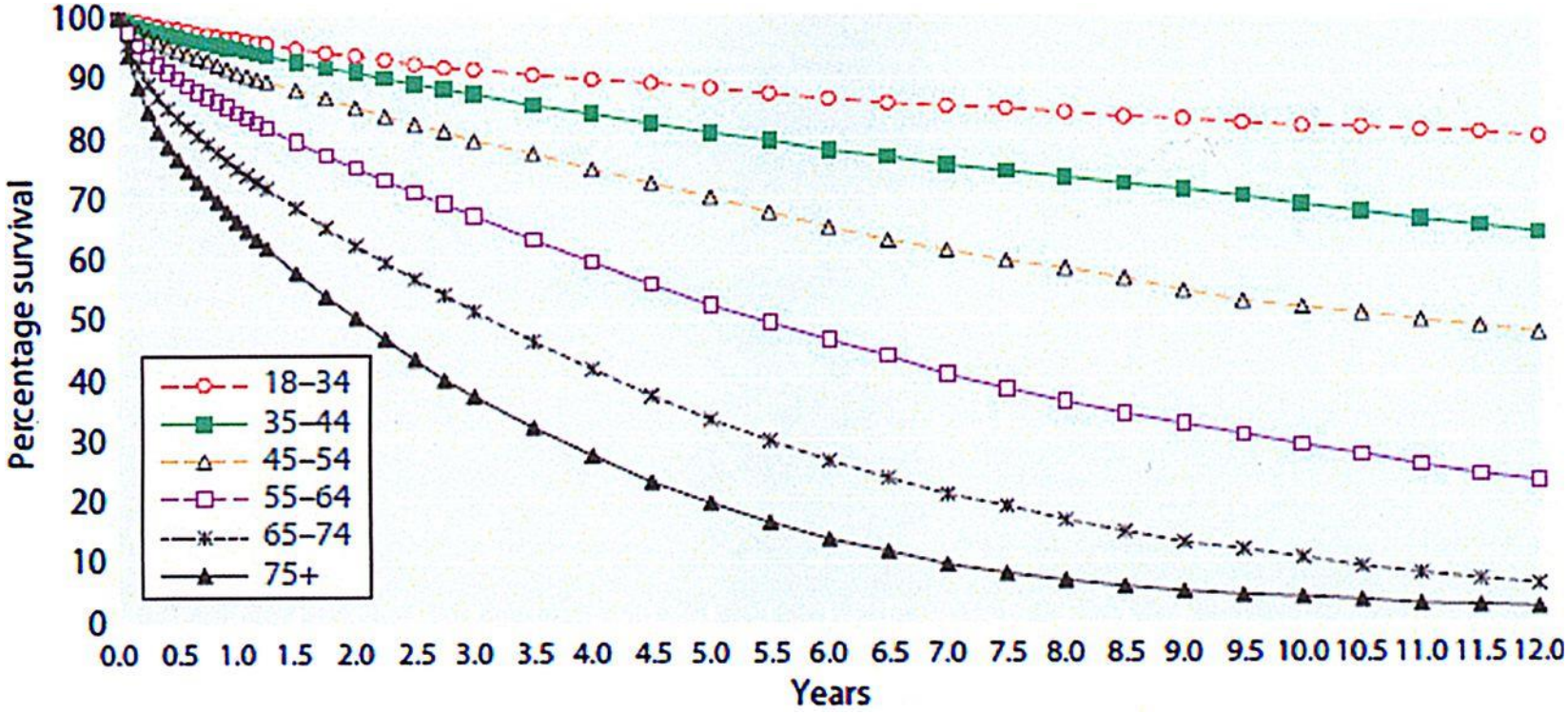
- Largest study to date by Hussain *et al* comparing outcomes in elderly pts choosing between RRT and CM
  - For pts >80 yo, with a poor performance status or high co-morbidity scores the survival advantage of RRT over CM was lost
  - Those accessing a CM pathway had greater access to palliative care services and were less likely to be admitted to or die in hospital (47% vs 69%)
- Murtagh *et al* similar results pts >75 yo and high comorbidity scores OR with IHD alone having no added benefit
- Tamura *et al* found that for LTC residents mortality 58% in the first year of dialysis with only 13% maintaining pre-dialysis functional status

**Kaplan–Meier survival curves for those with high comorbidity (score = 2), comparing dialysis and conservative groups (log rank statistic <0.001, df 1, P = 0.98).**




**Murtagh F E M et al. Nephrol. Dial. Transplant. 2007;22:1955-1962**

## Kaplan–Meier survival of incident patients 1997–2009 cohort

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# Symptom Burden in ESRD:

- Fatigue 12-97%
- Pain 8-82%%
- Pruritus 10-77%
- Dry skin 72%
- Insomnia 20-83%
- Nausea 15-48%
- Anxiety 12-52%
- Depression 5-58%
- Anorexia 25-61%
- Constipation 8-57%
- Muscle cramps 28-60%
- Dyspnea 11-55%
- Headache 18-71%
- Restless legs 8-52%
- QOL 35% lower than age matched healthy population

# Pain:

- One of the most common symptoms in pts with ESRD yet under-recognized and under-treated
- At least 50% of HD pts report pain and 82% of these report pain of moderate to severe intensity
- Dialysis Outcomes and Practice Patterns Study 74% pts reported moderate to severe pain however NO analgesic prescription
- Cohort of Canadian HD pts 75% were found to have a negative Pain Management Index

# Pain

- Has been shown to:
  - Negatively impact quality of life scores
  - Increase use health care system
  - Impair interpersonal relationships
  - Limit function
  - Increase rates of depression, anxiety, insomnia
  - Increase consideration of discontinuing dialysis

# Pain:

- Types: nociceptive, neuropathic, mixed
- Etiology multifactorial:
  - Comorbidities (DM, PVD)
  - Primary renal disease (PCKD)
  - Consequences of CRF (calciphylaxis, renal osteodystrophy)
  - D/t treatment of ESRD itself (dialysis, procedural)
- MSK pain most common (65%), peripheral neuropathy (15%), procedure-related pain (14%), and pain d/t PVD (10%)

# Choice of analgesic in ESRD:

Table 2. Modification of the WHO three-step analgesic ladder for ESRD according to Barakzoy and Moss, 2006 [5].

| Renal adaptation of the WHO 3-Step analgesic ladder | | |
|---|---|---|
| | Recommended drugs | Not recommended drugs |
| Step 1<br>Mild pain<br>(1 – 3) | Acetaminophen<br>(paracetamol) | NSAIDs<br>COX-2 inhibitors |
| Step 2<br>Moderate pain<br>(4 – 6) | *** Tramadol<br>Hydrocodone<br>Oxycodone<br>(plus acetaminophen) | Codeine |
| Step 3<br>Severe pain<br>(7 – 10) | Fentanyl<br>Methadone<br>***Hydromorphone<br>Oxycodone<br>(plus acetaminophen) | Morphine |

***Buprenorphine***

*** Use carefully in low doses

# Pain: Principles of pain management in ESRD

- Need to consider renal clearance of the parent compound and their active metabolites
- Is pt on dialysis?
- For drugs with renal clearance GFR approximates renal excretion and dose reductions required
- Within opioid class, lipophilic drugs such as fentanyl, buprenorphine and methadone preferred in dialysis pts
- More water-soluble molecules such as morphine, hydromorphone and oxycodone are removed by dialysis which can precipitate pain crisis and withdrawal

# Neuropathic pain:

- Challenging as many drugs CI or cautioned in ESRD
- Methadone remains favorable however current clinical practices unfortunately limit use
- Most traditional antidepressants and anticonvulsants require dose reductions or avoidance
- Gabapentin: 300 mg/d or Pregabalin 75 mg/d
- Nortriptyline: 10-25 mg qHS
- Cannabinoids: Nabilone 0.5mg BID
  - Adjuvant benefits (nausea, appetite) but may be poorly tolerated

# HEALTHCARE PROFESSIONALS

BCPRA provides a number of resources for health professionals, including:

Guidelines, Protocols & Clinical Tools
Chronic disease management initiatives
Disaster planning
Education and fellowships
End of life resources
Forms
Glomerulonephritis (GN) network and registry
Handouts
Patient database (PROMIS) – the Patient Record/Registration and Outcome Management Information System – the renal care community's clinical information system.
Pediatric program planning, to support children at high risk for kidney disease and ensure children in all areas of BC have access to care
Pharmacy & formulary resources, such as a list of essential medications, medication recommendations, and a partnership with community pharmacies
Provincial patient education strategy
Research
Vascular access
Links to other organizations and resources

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# Renal Analgesic Brochure

BC Renal Agency
An agency of the Provincial Health Services Authority

## Contents

# Discontinuing Dialysis: Who?

- 2nd leading cause of death in dialysis pts ~25% (1st CVS ~50%, 3rd infection ~13%)
- Associated factors:
  - Women 25% more likely than men
  - Caucasians 2x more than Asians or African-Americans
  - Age >75
  - LTC resident
  - Presence of progressive illness (dementia, cancer)
  - Poor performance status
  - Lower quality of life scores
  - Cachexia
  - Longer duration of dialysis

# Discontinuing Dialysis: How?

- Cohen et al: 8 dialysis clinics US and Canada with 137 cases of dialysis cessation
  - 85% had "good" or "very good" deaths
  - 15% had "bad deaths"
  - Pain 40%
  - Agitation 30%
  - Dyspnea 25%
- Others: fatigue, nausea, pruritus, restless legs, myoclonus, muscle twitching and seizures (drug-induced or d/t uremia)

# Discontinuing Dialysis: How?

- Dyspnea: fan, opioids, ultrafiltration RARELY required
- Secretions: glycopyrrolate, scopolamine
- Pruritus: ondansetron, gabapentin, mirtazapine
  - anti-histamines lack evidence but often still used, likely work via sedating properties only
- Agitation:
  - Haloperidol, loxapine, methotrimeprazine in reduced doses
  - Benzodiazepines ONLY if intractable and severe

# Discontinuing Dialysis: How?

- Pain: same principles of opioid prescribing with consideration to limited PO route (methadone and oxycodone)
- Nausea: uremia-induced mediated by dopamine
  - Haloperidol 1st line: 0.5 – 1 mg q8hrs (max 6mg/d)
- Myoclonus, muscle twitching and seizures
  - Rotate medications where applicable and appropriate
  - Benzodiazepines effective at treating symptom

# Discontinuing Dialysis: When and Where?

- If no residual renal fxn, mean survival 8-10 days
  - range 1-100 days
- Much longer and less predictable survival in pts with residual renal function (months – years)
- 73% dialysis pts die in hospital vs 33% who chose conservative management pathway
- <15% dialysis pts die in hospice
  - Partially explained by relatively rapid EOL trajectory
  - Average length of time at hospice 1 week and PPS at admission 20%

# Summary:

- Critical growing number of unwell pts with ESRD
- End-of life care needs are currently inadequately met
- Morbidity and mortality rates are high
- Effective management strategies exist when appropriate prescribing practices used
- Identifying pts who would benefit from a palliative approach to care is crucial to providing best patient-centered care
- For some pts, not having dialysis is a better option than continuing/initiating
- Dialysis may not improve overall survival and may be detrimental to QOL in elderly patients with multiple medical comorbidities
- WE NEED TO INCORPORATE A PALLIATIVE APPROACH TO CARE EARLIER AND MORE OFTEN

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