Management of the elderly with advanced CKD

Professor Edwina Brown
Imperial College Renal and Transplant Centre
Hammersmith Hospital, London
Rembrandt: Portrait of an Old Man in Red
Sorrowing Old Man (‘At Eternity’s Gates’) by van Gogh
ERBP guideline

• Scoping meeting Nov 13 – nephrologists and geriatricians

• ‘Screening of frail and older patients and referral between disciplines’ ranked highest
  – Geriatricians: assessment of frailty, rehabilitation, management of multimorbidity
  – Nephrologists: assessment of kidney function, RRT or not, management renal complications
  – Both: supportive care, withholding or withdrawal of dialysis; symptom control
Making our health and care systems fit for an ageing population

Authors
David Oliver
Catherine Foot
Richard Humphries

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Components of care for older people

1. Age well and stay well
2. Live well with one or more long-term conditions
3. Support for complex co-morbidities/frailty
4. Accessible, effective support in crisis
5. High-quality, person-centred acute care
6. Good discharge planning and post-discharge support
7. Effective rehabilitation and re-ablement
8. Person-centred, dignified long-term care
9. Support, control and choice at end of life
10. Shift to prevention and pro-active care

10 integrated services to provide person-centred care
Components of care all relate to advanced kidney disease

- Live well with 1 or more long-term conditions
- Support for complex co-morbidities and frailty
- Accessible effective support in crisis
- High quality person-centred acute care
- Good discharge planning and post-discharge support
- Effective rehabilitation and re-ablement
- Person-centred dignified long-term care
- Support, control and choice at end of life
Learning outcomes for session

• Concept of frailty
• Assessment of frailty
• Impact of frailty on patient outcomes and prognosis
• Dialysis or no dialysis?
• Symptom recognition and management
• Recognising end of life
• Advance care planning
What is frailty?

- Decreased physiologic reserves or dysregulation of multiple physiologic systems – associated with age and/or chronic illness
- Presents as composite of poor physical function, exhaustion, low physical activity and weight loss
- Associated with higher risk of falls, cognitive impairment, hospitalization and death
- More common in CKD than general population
Common clinical presentations of frailty

- **Non-specific**: extreme fatigue, unexplained weight loss and frequent infections
- **Falls**: balance and gait impairment important risk factors and are major features of frailty
- **Delirium**: rapid onset of fluctuating confusion when admitted to hospital. Associated with adverse outcomes
- **Fluctuating disability**: day to day instability resulting in good and bad days
Assessing frailty: should be routine nephrological care for older patients

• History:
  – daily activities of patient
  – how much help with these?
  – any change in physical activity?
  – any weight loss?
  – any falls?

• Examination:
  – walking speed into clinic and use of aids
  – muscle mass and strength
  – obvious weight loss
## Canadian Study of Health and Aging

### Frailty Scale (Rockwood et al, CMAJ 2005)

<table>
<thead>
<tr>
<th>Score</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Very fit</strong> – robust, active, energetic, well-motivated and fit</td>
</tr>
<tr>
<td>2</td>
<td><strong>Well</strong> – no active disease, but less fit than people in category 1</td>
</tr>
<tr>
<td>3</td>
<td><strong>Well, with treated comorbid disease</strong> – disease symptoms are well controlled compared with category 4</td>
</tr>
<tr>
<td>4</td>
<td><strong>Apparently vulnerable</strong> – although not frankly dependent, commonly complain of being “slowed up”</td>
</tr>
<tr>
<td>5</td>
<td><strong>Mildly frail</strong> – with limited dependence on others for instrumental activities of daily living</td>
</tr>
<tr>
<td>6</td>
<td><strong>Moderately frail</strong> – help is needed with both instrumental and non-instrumental activities of daily living</td>
</tr>
<tr>
<td>7</td>
<td><strong>Severely frail</strong> – completely dependent on others for the activities of daily living, or terminally ill</td>
</tr>
</tbody>
</table>
## Canadian Study of Health and Aging
### Frailty Scale (Rockwood et al, CMAJ 2005)

<table>
<thead>
<tr>
<th>Score</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td><strong>Very severely frail</strong> – completely dependent, approaching end of life. Typically, would not recover from even minor illness</td>
</tr>
<tr>
<td>9</td>
<td><strong>Terminally ill</strong> – approaching end of life with life expectancy &lt;6 months, but not otherwise evidently frail</td>
</tr>
</tbody>
</table>
Frailty associated with dementia

- Degree of frailty usually corresponds to degree of dementia
  - **Mild dementia**: forgetting details of recent event, repeating same question/story, and social withdrawal
  - **Moderate dementia**: recent memory very impaired but remembers past events; can do personal care with prompting
  - **Severe dementia**: cannot do personal care without help
Geriatric assessment and follow-up for patients identified as frail

• **Comprehensive geriatric assessment:** formal evaluation of patients using a ‘geriatric lens’.

• Conducted over several visits, in home and clinic, by multiprofessional team including nursing, physiotherapy, occupational therapy and social work

• Subsequent support has been shown to reduce hospital admissions, falls and moves into long-term care
# Elements of comprehensive geriatric assessment

<table>
<thead>
<tr>
<th>Medical assessment</th>
<th>Problem list (include vision, hearing..)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Co-morbid conditions and disease severity</td>
</tr>
<tr>
<td></td>
<td>Medication review</td>
</tr>
<tr>
<td></td>
<td>Nutrition status</td>
</tr>
<tr>
<td>Functional assessment</td>
<td>Basic activities daily living</td>
</tr>
<tr>
<td></td>
<td>Instrumental activities daily living</td>
</tr>
<tr>
<td></td>
<td>Activity / exercise status</td>
</tr>
<tr>
<td></td>
<td>Gait and balance</td>
</tr>
<tr>
<td>Elements of comprehensive geriatric assessment</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Psychological assessment</strong></td>
<td>Cognitive function testing</td>
</tr>
<tr>
<td></td>
<td>Mood / depression</td>
</tr>
<tr>
<td><strong>Social assessment</strong></td>
<td>Informal support needs and assets</td>
</tr>
<tr>
<td><strong>Environmental assessment</strong></td>
<td>Care resource eligibility / financial assessment</td>
</tr>
<tr>
<td></td>
<td>Home safety</td>
</tr>
<tr>
<td></td>
<td>Transportation needs</td>
</tr>
</tbody>
</table>
Cognitive Function

- Do not rely on simple conversation – can hide significant cognitive dysfunction
- Cognitive impairment in CKD mostly related to vascular disease and affects executive function
- Simple memory tests, including MMSE, often normal
- Executive function tests include clock drawing (easy to do in clinic), Trail Making Tests, MOCA
Key management principles for frailty

• Promote exercise – improves outcomes and functional ability
• Falls prevention
• Diagnosis of and support for dementia
  – Reduce antipsychotic prescribing
  – Training, education and support for carers
• Reduce inappropriate polypharmacy
Learning outcomes for session

• Concept of frailty
• Assessment of frailty
• **Impact of frailty on patient outcomes and prognosis**
• **Dialysis or no dialysis?**
• Symptom recognition and management
• Recognising end of life
• Advance care planning
Living Status and Residence in 97 patients >80 yrs
Assessed at 6-Month Intervals
Change in Functional Status after Initiation of Dialysis: 3700 nursing home residents

### FEPOD: Frailty is predictor of outcomes and dialysis modality (aPD cf HD)

<table>
<thead>
<tr>
<th>Multiplicity Adjusted P value</th>
<th>Age</th>
<th>Gender</th>
<th>Dialysis vintage</th>
<th>MMSE</th>
<th>Stote co-morbidity score</th>
<th>Frailty score</th>
<th>Dialysis modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF12 total</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.62</td>
<td><strong>0.022</strong></td>
<td>1.00</td>
</tr>
<tr>
<td>SF12 PCS</td>
<td>0.9</td>
<td>0.80</td>
<td>0.82</td>
<td>0.78</td>
<td>0.80</td>
<td><strong>0.002</strong></td>
<td>0.9</td>
</tr>
<tr>
<td>SF12 MCS</td>
<td>0.9</td>
<td>0.9</td>
<td>0.83</td>
<td>0.9</td>
<td>0.83</td>
<td>0.17</td>
<td>0.93</td>
</tr>
<tr>
<td>Illness Intrusion</td>
<td>0.14</td>
<td>0.72</td>
<td>0.84</td>
<td>0.89</td>
<td>0.42</td>
<td>0.39</td>
<td>0.97</td>
</tr>
<tr>
<td>Symptom score</td>
<td>0.9</td>
<td>0.92</td>
<td>0.84</td>
<td>0.51</td>
<td>0.56</td>
<td>0.26</td>
<td>0.15</td>
</tr>
<tr>
<td>HADS score</td>
<td>0.39</td>
<td>0.93</td>
<td>0.92</td>
<td>0.72</td>
<td>0.78</td>
<td>0.44</td>
<td>0.24</td>
</tr>
<tr>
<td>Barthel score</td>
<td>0.9</td>
<td>0.96</td>
<td>0.84</td>
<td>0.83</td>
<td>0.64</td>
<td><strong>0.003</strong></td>
<td>0.840</td>
</tr>
<tr>
<td>Timed Up and Go</td>
<td><strong>0.013</strong></td>
<td>0.70</td>
<td>0.15</td>
<td>0.25</td>
<td><strong>0.009</strong></td>
<td><strong>0.003</strong></td>
<td>0.72</td>
</tr>
</tbody>
</table>

Brown EA et al: submitted for publication
Survival of octogenarians on HD dependent on BMI, Karnofsky score and early or late referral

Joly et al, JASN 2003
Clinical score to predict 6 month prognosis in patients ≥75 yrs; French Rein Registry

- Body mass index <18.5 kg/m² (1 point)
- Congestive heart failure stages III-IV (2 points)
- Peripheral vascular disease stages III-IV (2 points)
- Dysrhythmia (1 point)
- Active malignancy (1 point)
- Severe behavioural disorder (2 points)
- Total dependency for transfers (3 points)
- Unplanned dialysis (2 points)

Couchoud et al, NDT 2009
Death and withdrawal from dialysis after 6 months by point score

Couchoud et al, NDT 2009
Predicting Six-Month Mortality for Patients Who Are on Maintenance Hemodialysis

Lewis M. Cohen,* Robin Ruthazer,† Alvin H. Moss,‡ and Michael J. Germain§


• Prognostic model for 6 month question using:
  – Surprise question
  – Age
  – Plasma albumin
  – Dementia
  – Peripheral vascular disease
Survival across quintiles of predicted risk

Survival related to physical activity in patients starting on dialysis

Johansen et al. CJASN 2013
Admission ADL score predicts death in hospital and discharge to assisted care facility in dialysis patients

Sood et al, AJKD 2011
Dialysis or no dialysis?
Survival of patients > 75 years old on dialysis or conservative care

Survival on dialysis or conservative care if > 75 yrs and 2+ comorbidities

Survival in patients >75 years old on RRT and conservative management related to comorbidity

Chandna et al. NDT (2011)
Survival from eGFR 20ml/min on Conservative Management cf Dialysis for age <80 and 80+

Hussain et al, Palliative Medicine 2013
Survival from eGFR 20ml/min on Conservative Management cf Dialysis for WHO performance status <3 and 3+

Hussain et al, Palliative Medicine 2013
<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation of activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>3</td>
<td>Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>4</td>
<td>Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair</td>
</tr>
<tr>
<td>5</td>
<td>Dead</td>
</tr>
</tbody>
</table>
Survival from eGFR 20ml/min on Conservative Management cf Dialysis for WHO performance status <3 and 3+

Hussain et al, Palliative Medicine 2013
A Patient-Centered Vision of Care for ESRD: Dialysis as a Bridging Treatment or as a Final Destination?

Stefaan J. Vandecasteele* and Manjula Kurella Tamura††

*Division of Nephrology and Infectious Diseases, AZ Sint-Jan Brugge-Oostende, Bruges, Belgium; †Geriatric Research and Education Clinical Center, Veterans Affairs Palo Alto, Palo Alto, California; and ‡Division of Nephrology, Stanford University School of Medicine, Palo Alto, California
### Treatment goals for patient-centred care when “Dialysis as Final Destination”

<table>
<thead>
<tr>
<th></th>
<th>Cure possible</th>
<th>Patient preferences</th>
<th>Aims of treatment</th>
<th>Medical supportive interventions</th>
<th>Pain and symptoms</th>
<th>Holistic support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure possible</td>
<td>No</td>
<td>Maximise quality of life +/- longevity</td>
<td>Treat complications</td>
<td>Minimal necessary blood tests</td>
<td>Proactive and regular screening</td>
<td>Promote self-care with nursing support; support to care-givers; psychological support; promote physical rehabilitation</td>
</tr>
<tr>
<td>Patient preferences</td>
<td></td>
<td></td>
<td>Prevent short-term complications</td>
<td>Minimise pill burden – mostly for symptom control and to prevent short term complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aims of treatment</td>
<td></td>
<td></td>
<td>Sustain private-life functioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical supportive interventions</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vandecasteele & Tamura, JASN 2014
Choice of dialysis modality

• No difference in survival on HD compared to PD
• Decision should therefore be made with patient dependent on patient goals, lifestyle and medical concerns
• Availability of assistance enables older patients to have dialysis at home – assisted PD considered first line treatment for older frail patients in France
Need for patient-centred care

• What matters to patient?
  – Travel?
  – Caring for spouse?
  – Grandchildren care?
  – Length of life or quality of life?
  – End of life priorities?
HD or PD in elderly: patient perspective
HD or PD in elderly: patient perspective

**HAEMODIALYSIS**
- Hospital based treatment
  - Not dependent on patient ability
  - Can provide social structure for frail elderly
  - Transport (journey and waiting time) needs to be added into treatment time
  - Often feel washed out for hours after HD session
- Interferes with social and family life
- Increased hospitalisation for vascular access problems
- Difficult to travel for holidays or visiting family

**PERITONEAL DIALYSIS**
- Home based treatment
  - Patient independence
  - Fits in with work and social activities
  - Can be done by carer (paid assistant or family)
- Less visits to hospital
- Flexibility of manual exchanges (3-4/day) or automated cycling machine over night
- Treatment burden related to daily and repetitive nature of performing exchanges
- Easier to travel to go on holiday or visit family nationally or overseas
HD or PD in elderly: doctor perspective
HD or PD in elderly: doctor perspective

**HAEMODIALYSIS**
- Familiar with HD; complications regarded as part of treatment
- Well-established pathways so easy to organise
- May be paid more for HD
- Very few medical contraindications so less need to assess patient for medical and psycho-social eligibility
- Many older patients find it difficult to make decisions and too many barriers to education so takes less time just to put patient on to HD – or keep patient on HD if presenting acutely

**PERITONEAL DIALYSIS**
- Often not familiar with PD and only see patients with complications
- Prejudice that older patients cannot do PD so not offered
- Takes time to have discussions about treatment choices and give information so PD not offered or discussed
## Delivering education to older patients

<table>
<thead>
<tr>
<th>EDUCATIONAL CONSIDERATION</th>
<th>POTENTIAL ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive dysfunction</td>
<td>Repeat information; easy to understand information; use active voice; use pictures (simple); 3-5 key points only</td>
</tr>
<tr>
<td>Visual and hearing impairment</td>
<td>Type size $\geq 12$ points; double space; clear and loud audio</td>
</tr>
<tr>
<td>Physical impairment</td>
<td>Enable access to education</td>
</tr>
<tr>
<td>Limited usage of or access to web-based materials</td>
<td>Ensure paper formats available or offer assisted learning and devices for Internet based learning.</td>
</tr>
</tbody>
</table>
Learning outcomes for session

- Concept of frailty
- Assessment of frailty
- Impact of frailty on patient outcomes and prognosis
- Dialysis or no dialysis?
- **Symptom recognition and management**
- Recognising end of life
- Advance care planning
Role of supportive care in advanced CKD management

Time

Dialysis  Transplant  Access  Surgery  Antibiotics

Aggressive treatment

Supportive care

Bereavement

Pain control  Symptom control  Psycho-social support
Awareness of patient goals and concerns
Common symptoms that should be asked about – and are treatable

- Pain
- Nausea / Vomiting
- Shortness of breath
- Ankle swelling
- Pruritis
- Restless legs
Advance Care Planning

- Process of discussion between patient, family and healthcare providers to clarify values, treatment preferences and goals of end of life care
- Provides means to ensure that healthcare team and family are aware of patients’ wishes for care if they become unable to make own decisions
- May include patient completing advance directive and/or appointment of substitute decision maker
Benefits of ACP

- Limited information for CKD or dialysis setting
- In general medical setting, evidence that ACP
  - increases patient and family satisfaction with care
  - increases likelihood that physicians and family understand and comply with patient wishes
  - increases hospice use
  - leads to less interventional care at end of life
  - contributes to lower stress, anxiety and depression in surviving relatives

Luckett T et al, AJKD 2014
EDITORIALS

Why is talking about dying such a challenge?
Much more needs to be done to encourage the conversation

Kirsty Boyd consultant in palliative medicine¹, Scott A Murray St Columba’s Hospice chair of primary palliative care²

¹Royal Infirmary of Edinburgh, Edinburgh, UK; ²Primary Palliative Care Research Group, Medical School, University of Edinburgh, Edinburgh EH8 9AG, UK
How to talk about future care with patients and families

• Assess the person’s understanding and awareness
• Find out what the person is thinking about the future
• Decide how urgently the person needs information about his or her deteriorating health

Boyd K, Murray SA. BMJ 2014
How to talk about future care with patients and families

• The person’s health is deteriorating but he/she is ambivalent about being more open
  – I hope you will stay well for a long time, but I am also worried about......
  – I don’t want to upset you, but it is difficult to look after you well if we don’t talk about what might happen. What would be the best way for us to talk about that?

Boyd K, Murray SA. BMJ 2014
Edward Munch: Between the Clock and the Bed 1940-42