Adjusted First-Year Death Rates: Incident ESRD Patients

Deaths per 100 patient years at risk

Year of Incidence


27.5 25.9 26.4 25.6 24.4 24.1 24.2 23.6 23.8 24

Adjusted First-year death rates

U.S. Renal Data System Annual Data Report 2001
Adjusted First-Year Death Rates: By Treatment Modality

Year of Incidence

Deaths per 100 patient years at risk

- Hemodialysis
- Peritoneal Dialysis
- Transplantation

U.S. Renal Data System Annual Data Report 2001
Impact of Age on Mortality among New ESRD Patients

Stack et al: Kidney Int 2003,1071-1019
Impact of Race on Survival of New ESRD Patients

Stack et al: Kidney Int 2003,1071-1019
Cardiovascular Conditions among New ESRD Patients

Left Ventricular Hypertrophy in Chronic Kidney Disease


Calculated Creatinine Clearance (ml/min)

Prevalence (%)
Mortality Impact of Cardiovascular Conditions among new ESRD

Stack *et al*: Kidney Int 2003,1071-1019

*P<0.001
Impact of Baseline BMI and Changes over 6-months on Mortality

Slide 8.

Impact of Baseline Albumin and Changes over 6-months on Mortality

Slide 9.

Impact of Serum Creatinine and Changes over 6-months on Mortality

Slide 10.

C-Reactive Protein and Mortality Risk in Hemodialysis


C-reactive Protein (mg/L)

- <3.3: 1.00
- 3.3-7.4: 1.66
- 7.5-15.7: 2.77*
- >15.7: 4.64**

*P<0.05, **P<0.0001
Impact of Neutrophil Count and Changes over 6 mths with Mortality Risk

A

Baseline neutrophil, cells/mm$^3$

0.69↑

0.80$^*$

0.82

1.00

<3.4

3.4 to 4.7

4.7 to 6.4

>6.4

REF

Relative risk

B

Δ6-month neutrophil, %

0.76

0.63$^*$

0.73

1.00

<23.7

-23.7 to -2.1

-2.1 to 16.0

>16.0

Mortality Risks By Vascular Type among U.S. Hemodialysis Patients

CVC= central venous Catheter; AVG=arteriovenous graft; AVF=arteriovenous fistula

Slide 13.

Dhingra et al Kidney Int 2001, 1443-1451
Arteriovenous Fistula use among Incident Patients: Europe vs U.S.A.

- Non-diabetic white males age 18–54 years (i): EUR n=97 (77%), US n=87 (24%)
- Non-diabetic white males age >54 years (ii): EUR n=214 (71%), US n=268 (19%)
- Diabetic white females age >17 years (iii): EUR n=83 (63%), US n=236 (11%)
First Consult with a Nephrologist prior to ESRD Start: DMMS W2 Study

Time prior to ESRD Start (months)

- > 12: 43.2
- 12 and 4: 21
- 3 and 1: 12.4
- <1: 10.4
- No visit: 9
- Not sure: 4

Stack et al Am J Kidney Dis 2003, 310-318
Mortality Risk: Late vs Early Referral in new ESRD patients

<table>
<thead>
<tr>
<th>Adjustment</th>
<th>RR 1-year</th>
<th>(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unadjusted</td>
<td>1.57</td>
<td>(1.25-1.98)</td>
</tr>
<tr>
<td>+ Demographic</td>
<td>1.57</td>
<td>(1.25-1.98)</td>
</tr>
<tr>
<td>+ Comorbid</td>
<td>1.68</td>
<td>(1.31-2.15)</td>
</tr>
<tr>
<td>+ pre-ESRD factors(^1)</td>
<td>1.66</td>
<td>(1.28-2.16)</td>
</tr>
</tbody>
</table>

\(^1\)Also adjusted for exercise level, erythropoietin use, visits to a dietitian

Stack et al, Am J Kidney Dis, 2003, 310-318
Ca++ Channel Blockers, HMG-CoA Reductase Inhibitors and Mortality

Kestenbaum et al, Seliger et al, Kidney Int, 2002

Slide 17.
Prevalence of ACE Inhibitor Use by Cardiac Condition

<table>
<thead>
<tr>
<th>Cardiac Condition</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>CHF</td>
<td>27.3</td>
</tr>
<tr>
<td>CAD</td>
<td>26.7</td>
</tr>
<tr>
<td>LVH</td>
<td>28.2</td>
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<tr>
<td>Cardiomegaly</td>
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</tbody>
</table>

Dhingra et al. ASN 2001

Slide 18.
Prevalence of Beta-Blocker Use by Cardiac Condition

Dhingra et al ASN 2001

<table>
<thead>
<tr>
<th>Cardiac Condition</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF</td>
<td>18.1</td>
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<tr>
<td>CAD</td>
<td>22.3</td>
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<tr>
<td>LVH</td>
<td>22</td>
</tr>
<tr>
<td>Cardiomegaly</td>
<td>19.5</td>
</tr>
</tbody>
</table>
The Optimal pre-End-stage Kidney Disease (ESRD) Plan

Optimal pre-ESRD care

Early detection of CRF

Interventions that delay progression
- ACE inhibitors
- BP control
- Blood sugar control
- Protein restriction?

Prevention of uremic complications
- Malnutrition
- Anemia
- Osteodystrophy
- Acidosis

Modification of comorbidity
- Cardiac disease
- Vascular disease
- Neuropathy (in diabetics)
- Retinopathy (in diabetics)

Preparation for RRT
- Education
- Informed choice of RRT
- Timely access placement
- Timely initiation of dialysis

Pereira, Kidney Int 2000, 351-365