Heart Disease and CKD: Is it Getting Any Better?

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Outline

• Causes of death in dialysis patients
• Temporal trends in cause-specific cardiovascular mortality in dialysis patients
• Cardiovascular disease in (non-ESRD) CKD: scope of the problem
• Geographic variation and temporal trends in cardiovascular morbidity in CKD patients
• Speculations on past and future trends


USRDS ASN 2011
Unadjusted cardiovascular mortality rates in prevalent dialysis patients

Period prevalent dialysis patients; unadjusted.
Unadjusted and adjusted cause specific mortality in prevalent dialysis patients

Ref: 2005 dialysis patients
Unadjusted and adjusted cause specific cardiovascular mortality rates in prevalent dialysis patients
Ref: 2005 dialysis patients

Unadjusted

Adjusted

Deaths per 1,000 pt years at risk

All CVD

Cardiac arrest/arrhythmia

AMI

CHF
CVA/TIA

AMI

CHF
CVA/TIA

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USRDS ASN 2011
Unadjusted cardiovascular mortality rates in prevalent dialysis patients: All CVD (age)
Unadjusted cardiovascular mortality rates in prevalent dialysis patients: All CVD (gender)
Unadjusted cardiovascular mortality rates in prevalent dialysis patients: All CVD (race)
Unadjusted cardiovascular mortality rates in prevalent dialysis patients: All CVD (diabetic status)
Unadjusted cardiovascular mortality rates in prevalent dialysis patients: All CVD (modality)
Unadjusted Cardiac Arrest mortality rates in prevalent dialysis patients (age)
Unadjusted Cardiac arrest, mortality rates in prevalent dialysis patients (race)
Unadjusted Cardiac arrest mortality rates in prevalent dialysis patients (modality)
Unadjusted Cardiac arrest mortality rates in prevalent dialysis patients (diabetic status)
Geographic variations in unadjusted CV mortality rates in dialysis patients (deaths per 1,000 patient years), by HSA: 1999, 2009

Period prevalent dialysis patients; unadjusted.
Patients treated for CHF, by type of medication & modality, 2008

January 1 point prevalent patients with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008.

- None 23.3%
- Beta blocker 64.9%
- ACE/ARB 47.6%
- Digoxin 6.7%
- Dialysis (n=52,663)

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January 1 point prevalent patients with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008.
Prescription drug therapy in prevalent ESRD patients with AMI, by modality & race, 2008

January 1 point prevalent patients with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008.

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Cardiovascular disease in patients with or without chronic kidney disease, 2009

No CKD
(n = 416,585)

CKD
(n = 74,072)

CVA/TIA 20.2%

CHF 19.5%

AMI 6.0%

None 61.1%

CVA/TIA 26.5%

CHF 44.2%

AMI 12.8%

None 38.0%

December 31 point prevalent Medicare enrollees age 66 & older, with fee-for-service coverage for all of 2009.

USRDS ASN 2011
Geographic variations in rates (per 1,000 population) of congestive heart failure (CHF) in patients with CKD, by HSA: 1999, 2009

January 1 point prevalent Medicare enrollees with a first CHF diagnosis in 1999, age 66 & older, with fee-for-service coverage for 12 months before CHF diagnosis.

January 1 point prevalent Medicare enrollees with a first CHF diagnosis in 2009, age 66 & older, with fee-for-service coverage for 12 months before CHF diagnosis.
Geographic variations in rates (per 1,000 population) of CVA/TIA in CKD patients, by HSA: 1999, 2009

January 1 point prevalent Medicare enrollees with a first hospitalized CVA/TIA in 1999, age 66 & older, with fee-for-service coverage for 12 months before admission for stroke.

January 1 point prevalent Medicare enrollees with a first hospitalized CVA/TIA in 2009, age 66 & older, with fee-for-service coverage for 12 months before admission for stroke.
Geographic variations in unadjusted incidence rates of cardiac arrest (per 1,000 patient years) in patients with CKD, by state, 1999, 2009
Prescription drug therapy in patients with CHF, by CKD status, & race, 2008

January 1 point prevalent Medicare enrollees age 66 & older, with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008, & with survival & Part D coverage for one month after event.
Prescription drug therapy in patients with AMI, by CKD status, & race, 2008

January 1 point prevalent Medicare enrollees age 66 & older, with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008, & with survival & Part D coverage for one month after event.
Percent of patients treated for CHF, by type of medication & CKD status, 2008

January 1 point prevalent Medicare enrollees age 66 & older, with a first cardiovascular diagnosis or procedure between January 1 & November 30, 2008, & with survival & Part D coverage for one month after event.
Conclusion

- Progressive decline in cardiovascular mortality over time in dialysis patients
- Most of improvement in US dialysis patient survival is attributable to decline in CV mortality
- HP 2020 CV mortality goal (CKD-14.3) of 81.3 CV deaths/1000 pt yrs nearly met in 2009.
- Decline in cardiovascular morbidity in elderly CKD patients over time.
- A sea change in the treatment of cardiovascular disease?