Methods

- With expected mortality ratio defined as mortality rates in dialysis patients as numerator and mortality rates in the U.S. population as denominator, the primary objective of this study was to compare expected mortality ratios in US dialysis patients between 1997 and 2007.

- Expected mortality ratios in dialysis populations were calculated by applying general population death rates to 66 different groups defined by age (11 groups), sex (2 groups, M/F) and race (3 groups, White, African American and Hispanic/Latino).

- Incident and prevalent analyses were performed.

- Follow-up was 1 year.

- Overall, CV (stroke or coronary heart disease) and non-CV mortality were examined.

Results

- Among incident patients, the mortality rate was 25.6 per 100 person years in 1997. By 2007, a 4.6 (95%CI 2.8-6.5) percent reduction was observed, increasing to 9.5 (7.3-11.7) when adjustment was made for age, sex and race.

- Among prevalent patients, the mortality rate was 21.3 per 100 person years in 1997. By 2007, a 10.1 (95%CI 2.9-11.2) percent reduction was observed, increasing to 15.3 (13.9-16.8) when adjustment was made for age, sex and race.

- Among incident patients, actual-to-expected mortality ratios in the overall dialysis population fell from 12.5 to 10.1 between 1997 and 2007. Corresponding values in prevalent patients were 12.2 and 9.3 (Figures 1 and 2).

- Declining mortality ratios were apparent in most subgroups studied.

- Declines in mortality ratios were more marked for CV death than for non-CV death.

Conclusions

Declining mortality trends in US dialysis patients have occurred in spite of increasing burdens of comorbid illness, like diabetes and cardiovascular disease. While encouraging, these trends are difficult to explain, as, to date, no single intervention has been shown to reduce mortality in large, multicenter trials. The findings in this study, however, are not compatible with the hypothesis that mortality declines in dialysis are caused by effects in the general population, with the rising tide of general population survival raising the metaphorical boat of dialysis survival.