

Maternal Comorbidity and Live Birth Rates in the Dialysis and Renal Transplant Populations

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Introduction

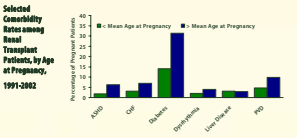
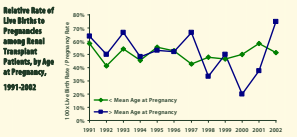
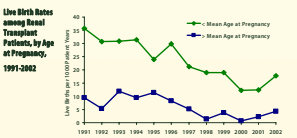
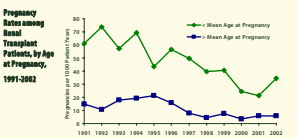
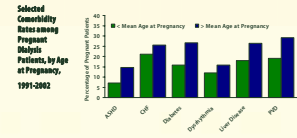
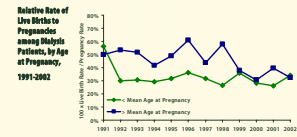
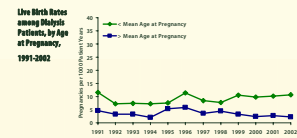
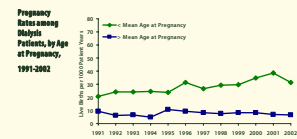
- Previously, the United States Renal Data System (USRDS) evaluated pregnancy and live birth rates among dialysis and transplant patients.
- The initial definition of pregnancy, as informed by Medicare claims, required a large number of claims to reduce the possibilities that patients were being evaluated for pregnancy and that patients were receiving postpartum care for a pregnancy that predated the start of dialysis, as opposed to the case that the patient was actually pregnant.
- To ensure the broadest and most complete view of pregnancy and live birth rates, we evaluated a slightly relaxed definition of pregnancy.
- Additionally, we assessed differences in rates, based upon younger versus older women of childbearing age, so as to create more comparable groups between dialysis and renal transplant populations between 1991 and 2002.
- We also assessed comorbidity burden, as informed by claims submitted during the period of time antecedent to the outcome of the pregnancy.

Methods

- We collected cohorts of period-prevalent dialysis and renal transplant patients for each year from 1991 to 2002.
- Female patients were between the ages of 14 and 44, were prevalent for at least 90 days prior to January 1, survived the one-year follow-up period beginning on January 1, and carried Medicare Parts A and B coverage during the entire follow-up period.
- Renal transplant patients more than two years removed from their most recent transplantation were excluded.
- Pregnancy was indicated by:
 - At least one inpatient claim with a pregnancy-associated diagnosis,
 - At least two outpatient claims or physician/supplier claims with a pregnancy-associated diagnosis, procedure, or supply, and,
 - At least one claim indicating ectopic pregnancy, abortion (induced or spontaneous), vaginal delivery, or Caesarean delivery.
- Antepartum comorbidity was defined by the presence of at least one inpatient claim, or at least two other claims during the nine months preceding the end of the pregnancy.

Results

- From 1991 to 2002, the average age of pregnant dialysis patients was between 31 and 32 years, while the average age of pregnant transplant patients was between 28 and 29 years.
- Among younger dialysis patients, the pregnancy rate increased, from 21 pregnancies per 1,000 patient-years (ppK) in 1991, to a high of 39 ppK in 2001. The pregnancy rate among older dialysis patients declined modestly since 1995, from 11 ppK in 1995, to 7 ppK in 2002.
- Among transplant patients, pregnancy rates have declined. In younger patients, rates have decreased from 61 ppK in 1991, to 35 ppK in 2002, and in older patients, rates have fallen from 15 ppK in 1991 to 6 ppK in 2002.
- Since 1992, the relative rate of live births to pregnancies among younger dialysis patients has remained near 30%. The relative rate among older dialysis patients, however, has fallen from a peak of 61% in 1996, to 33% in 2002.
- Among younger transplant patients, the relative rate of live births to pregnancies has remained between 45% and 55% since 1991.



Conclusions

- Older dialysis patients exhibited higher rates of atherosclerotic heart disease (ASHD), diabetes, liver disease, and peripheral vascular disease (PVD), than younger dialysis patients.
- Pregnancy and live birth rates have increased among dialysis patients less than 30 years old.
- In contrast, pregnancy and live birth rates across all strata of transplant patients have fallen.
- The relative rate of live births to pregnancies has remained near 30% for younger dialysis patients, and recently has declined to comparable levels among older dialysis patients.
- Transplant patients have typically exhibited better pregnancy outcomes (i.e. higher relative rates of live births to pregnancies) compared to dialysis patients.
- Pregnant dialysis patients suffer from high levels of comorbidity, including diabetes and vascular disease.