

MORTALITY PATTERNS AMONG INCIDENT PATIENTS ON HEMODIALYSIS AND PERITONEAL DIALYSIS: A COHORT STUDY

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OBJECTIVES

Mortality rates are extremely high on dialysis, and could vary for different dialysis modalities. We investigated the patterns of mortality among patients started treatment with hemodialysis (HD) and peritoneal dialysis (PD).

METHODS

We performed the analysis of the Russian Registry of Renal Replacement Therapy with inclusion of 13,353 patients (11,802 HD and 1,551 PD) started dialysis in period 2004-2008, and 18,944 (17,376 HD and 1,568 PD) started dialysis in period 2009-2013. Patients were classified according initial dialysis modality. Survival was calculated by Kaplan-Meier method with "as treated" approach (censoring at end study period, kidney transplantation, dialysis modality switch > 30 days, or lost of follow-up). Deaths occurred in the first 30 days after modality switch were attributed to the initial dialysis modality.

RESULTS

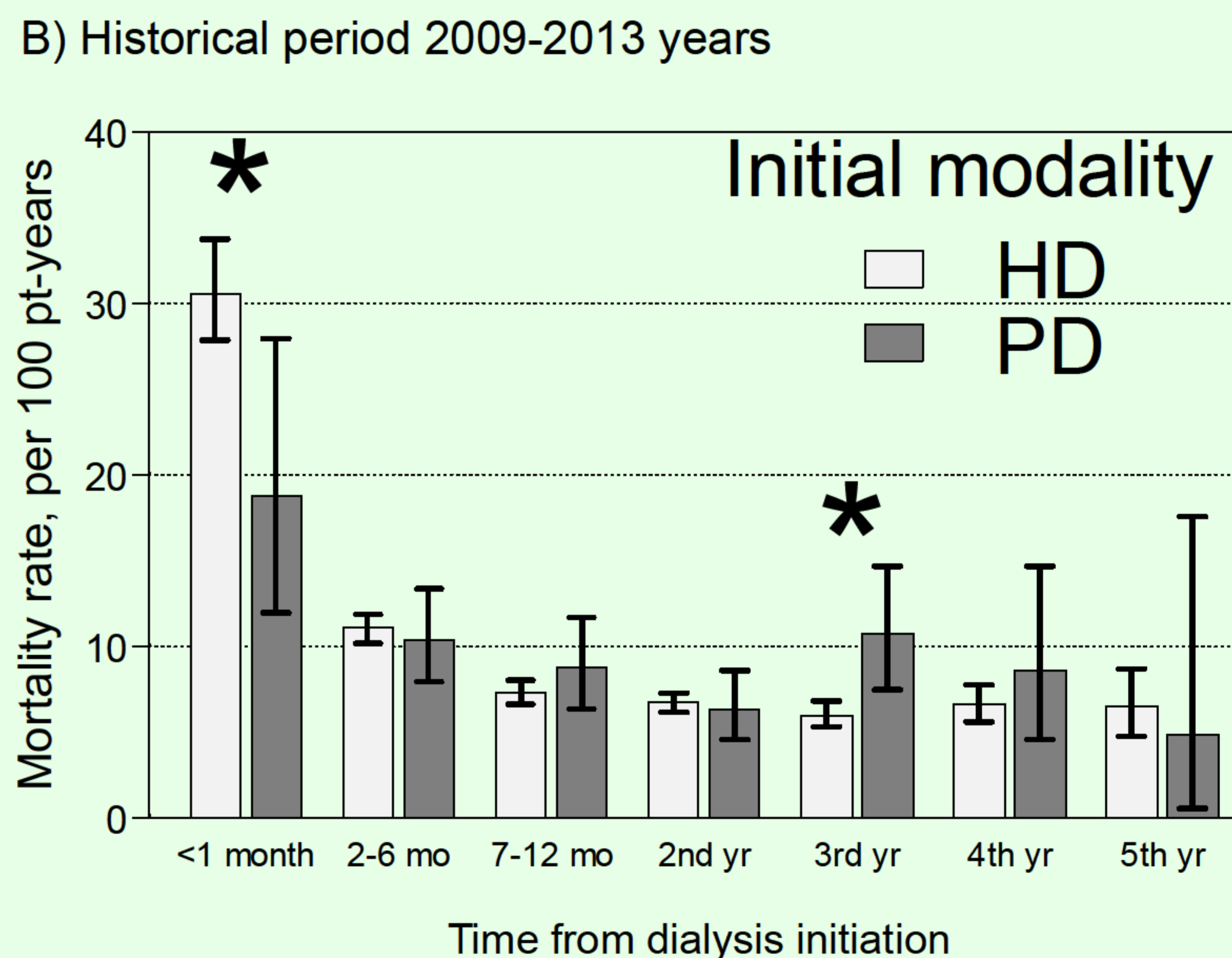
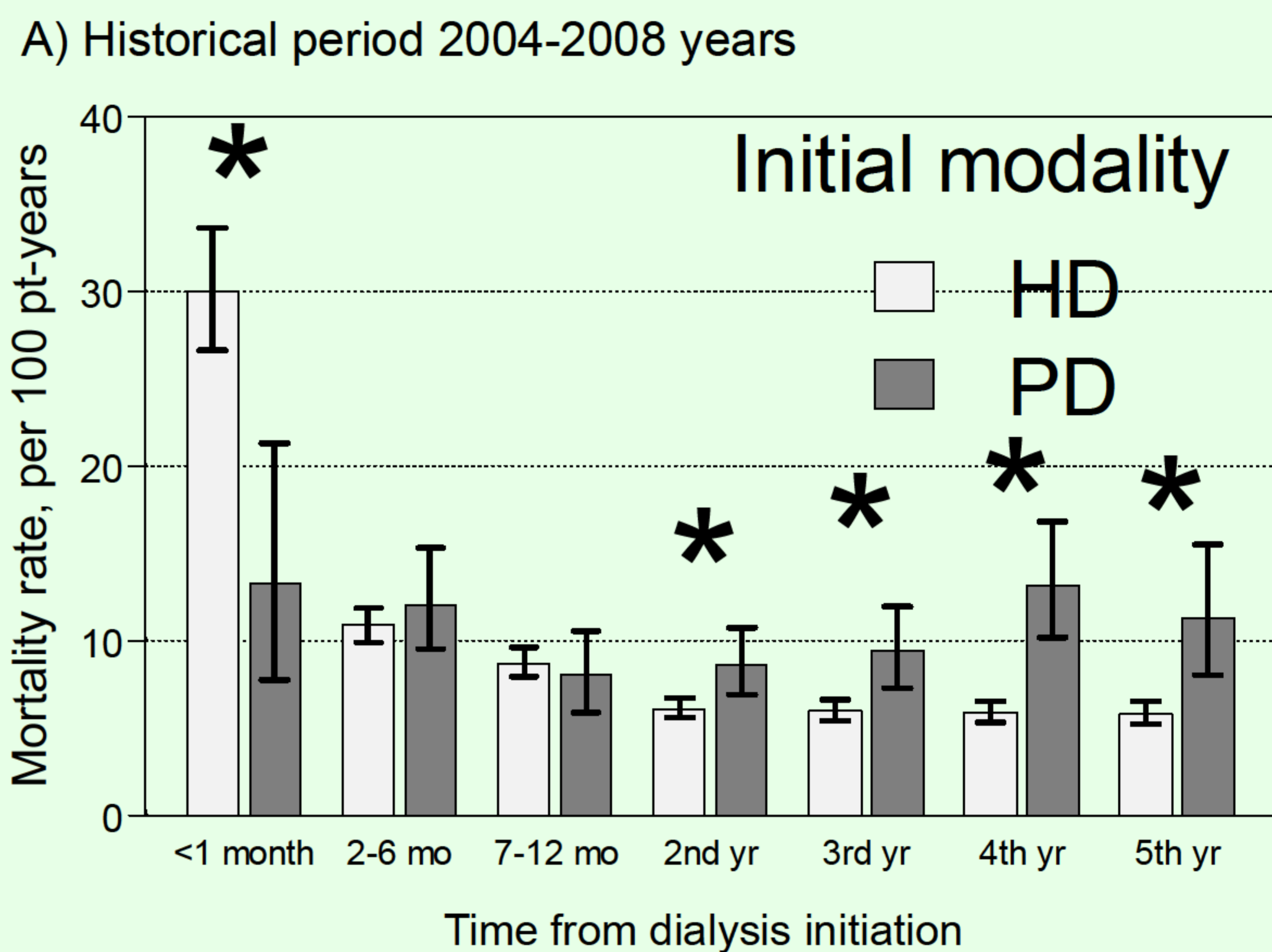
Five-year survival rates were 70.3% (95%CI 69.4-71.3) for HD and 59.0% (95%CI 55.6-62.6) for PD patients ($P<0.0005$) in the historical period 2004-2008, and 69.7% (95%CI 67.8-71.6) for HD and 66.1% (95%CI 60.1-72.7) for PD patients ($P=0.75$) in the historical period 2009-2013. Overall mortality was 7.6 (95%CI 7.3-7.9) per 100 patient-years of follow-up on HD and 10.2 (95%CI 9.2-11.3) on PD ($P<0.0005$) during 2004-2008 years, 8.8 (95%CI 8.5-9.1) per 100 patient-years of follow-up on HD and 9.2 (95%CI 8-10.5) on PD ($P=0.50$) during 2009-2013 years.

We also analyzed the mortality rates according time from dialysis initiation (figure), and found that mortality was significantly higher among HD patients during the first month of treatment ($P<0.05$) for both historical periods. In opposite, mortality rates were higher among PD patients during the 2nd ($P<0.01$), 3rd ($P<0.01$), 4th ($P<0.0005$), and 5th ($P<0.0005$) years of follow-up during period 2004-2008, and only during the 3rd year ($P<0.005$) of follow-up during period 2009-2013.

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Figure. Mortality in incident dialysis patients according initial dialysis modality and time from dialysis initiation, for historical periods 2004-2008 (A) and 2009-2013 (B)



*** $P<0.05$

CONCLUSIONS

We found that both survival and mortality improved among PD patients in years 2009-2013 in comparison with previous 5-year period. Overall, survival and mortality were comparable for PD and HD patients started treatment during 2009-2013 years. But there were important differences in mortality time trends, with significantly higher mortality on HD during the first month from dialysis initiation, and significantly higher mortality on PD during the third year of treatment. Special attention should be kept for PD patients treated for 3 and more years, with evaluation and correction of possible factors responding for increased mortality.