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PERITONEAL DIALYSIS TIME ON THERAPY AND REGIONAL DIFFERENCES IN DEATH, TRANSFER TO HEMODIALYSIS AND KIDNEY TRANSPLANTATION: RESULTS FROM THE PDOPPS

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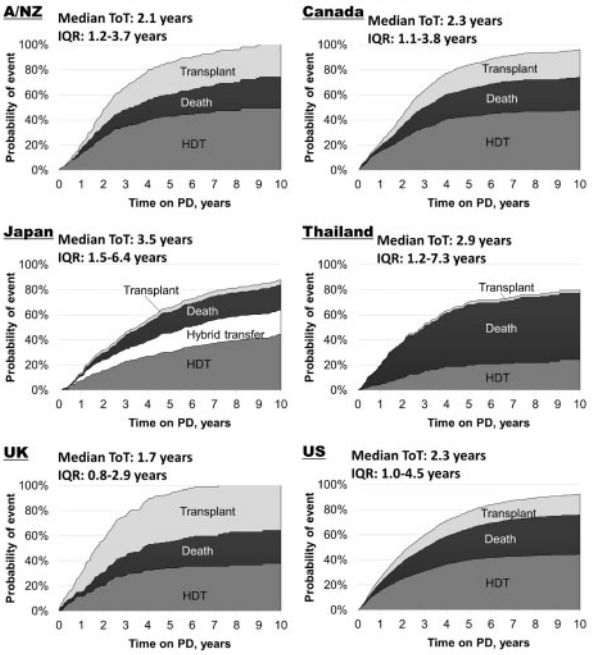
BACKGROUND AND AIMS: Comparing and interpreting regional differences in peritoneal dialysis (PD) time on therapy needs to consider differences in the rates of permanent transfer to hemodialysis (HDT), death or kidney transplantation. Here we describe these outcomes among countries in the Peritoneal Dialysis Outcomes and Practice Patterns Study (PDOPPS), as well as reasons for PD discontinuation.
METHOD: PDOPPS is a prospective cohort study of randomly selected patients across national samples of PD facilities from Australia/New Zealand (A/NZ), Canada, Japan, Thailand, the UK, and the US. Fine and Gray models were used on a population of 7115 patients, of varying PD vintages at study entry [median (IQR) vintage = 0.82 yrs (0.21, 2.03)], to analyse the cumulative incidence from PD start of transplantation, HDT, or death (on PD or within 7 days of transfer to HD). This allows for the determination of the % of patients remaining on PD at each PD vintage referred to as Time on Therapy (ToT). Models were left truncated to account for PD vintage at time of study enrollment. HDT was defined as no return from HD therapy within 12 weeks of transferring to HD. Cox models were used to calculate hazard ratios (HR) for death accounting for facility clustering and adjusted for patient age, sex, US black race, heart disease, diabetes, psychiatric disorder, prior HD experience, urine volume, and transplant waitlist referral.
RESULTS: Mean patient age ranged from 56 yrs in Thailand to 64 yrs in Japan (Figure). Overall, 1261 patients transferred to HD, 76 patients transferred to HD/PD hybrid therapy, 900 patients died and 506 were transplanted during follow-up. By 3 years, the % of patients remaining on PD ranged from 25% in UK, 34-40% in A/NZ, Canada and US, to 47% in Thailand, and 54% in Japan (Figure). The much lower % of patients on PD at 3 yrs in the UK vs Japan was largely due to the high % of patients transplanted in the UK vs Japan: % transplanted ranged from 2% in Japan and Thailand to 32% in the UK at 3 yrs. When defining a 'poor outcome' as either death or HDT: (1) the % of patients still on PD or having been transplanted were quite similar across all 6 countries, and (2) death was a much larger proportion of this 'poor outcome' in Thailand vs other countries.
Similar risks of HDT were seen across all countries except Thailand which displayed much lower risks of HDT. This finding changed little with covariate adjustment (not shown). Infection, reported as primary HDT cause, varied from 30% (Canada) to 66% (Thailand) of cases, and insufficient solute or water clearance as primary HDT cause ranged from 6% (Thailand) to 44% (Japan) of cases (not shown).
In Cox models, the adjusted HR of death, compared to the US, was higher in Thailand [1.55 (1.17-2.06)], lower in Canada [0.75 (0.61-0.92)], A/NZ [0.60 (0.47-0.78)], and Japan [0.36 (0.27-0.48)], and close to 1 in UK [0.98 (0.75-1.28)].
CONCLUSION: Time on PD therapy differed considerably across countries. This was mainly due to large country differences in proportion transplanted, so that transplantation has a greater impact on country variability in ToT than HDT and death. Risk of death varied greatly across countries, particularly when accounting for case-mix. With the exception of Thailand, differences between countries in risk of HDT were modest. Marked differences in recorded reasons for HDT merit additional study.

% of patients departing from PD (*by time on therapy*), & cumulative incidences of transfer to HD, transplantation, and death, by country



HDT = permanent transfer to hemodialysis; ToT= time on PD therapy; IQR = interquartile range;
Mean Patient Age: 56 yrs (Thailand), 58 yrs (US), 60 yrs (UK), 61 yrs (Canada), 63 yrs (A/NZ), 64 yrs (Japan)
Follow-up time: Median 1.12 years, IQR: 0.62-1.67 years.