Peritoneal Dialysis can provide ESRD patients a strong foundation for Renal Replacement Therapy (RRT).
Build a strong foundation with PD

Patients with end-stage renal disease (ESRD) have a number of options for renal replacement therapy (RRT), and it’s important to their long-term success to start on the treatment that is best for them.

Peritoneal dialysis (PD) can provide a strong foundation for RRT. For years, PD has been viewed as being more about patient convenience than therapy effectiveness. But PD also delivers strong clinical results—the kind of results that can improve a patient’s chance of RRT success compared to in-center hemodialysis (ICHD).\(^1\)\(^-\)\(^4\)\(^,\)\(^5\)\(^-\)\(^7\)

And in addition to delivering the clinical benefits that can provide a strong foundation for RRT, PD can instill a feeling of empowerment that patients can hold onto throughout their treatment.\(^8\)

Every ESRD patient’s treatment begins with a first step. Make that first step a strong one.

Start Strong with PD.
Survival is the ultimate clinical goal for any dialysis modality

If survival is the bottom line, consider PD as your first line.

• Survival of PD patients compared with ICHD patients was shown to be improved for younger patients without major comorbidities²,9,10
• Incident ESRD patients treated with PD have shown improved survival compared with those treated with ICHD using a CVC¹¹
  – Compared to PD patients, ICHD patients using an AVF/AVG had similar first-year survival and better 5-year survival¹¹

Patients treated with PD have shown improved early survival (within the first 2 years) compared to those treated with ICHD¹-⁴

Adapted from Yeates K et al.¹
Analysis of data from the Canadian Organ Replacement Register (n=46,839) of survival outcomes for patients initiating PD or HD in Canada from 1991–2004 with follow up to December 31, 2007. Cumulative hazard ratios (PD:HD) were estimated by an intention-to-treat analysis using a nonproportional hazards model, with adjustment for case-mix differences, region, age, gender, race, cause of primary renal disease, diabetes, and comorbidity.
PD can help preserve RRF for the future

Residual renal function (RRF) remains clinically important even after starting dialysis.\textsuperscript{13,14} Preservation of RRF has been shown to have many benefits that can create a strong foundation for long-term RRT success.\textsuperscript{15,16-18}

- More RRF has been associated with improved survival compared to less RRF\textsuperscript{13,14}
- RRF has been shown to facilitate optimal fluid balance,\textsuperscript{15} phosphate level management,\textsuperscript{16,17} and removal of ß2 microglobulin\textsuperscript{18}

RRF was better preserved in patients on PD compared to those on ICHD using standard quality dialysis fluid\textsuperscript{5}

\[ \text{Adjusted residual glomerular filtration rate (rGFR) values ± SE at the start and after 3, 6, and 12 months of dialysis. The adjusted values were obtained after back transformation from In(rGFR+1), which was the studied variable. Adjustments were made for baseline GFR, age, primary kidney disease, comorbidity, body mass index, systolic and diastolic blood pressure, use of antihypertensive drugs, dropout, time of dropout, and reason of dropout (including change of treatment). After adjustment, averaged over time, PD patients had a higher rGFR than HD patients (}\text{P}<0.0001). The relative decline of rGFR was faster in HD compared to PD patients (}\text{P}=0.04).\]

The UK National Institute for Health and Clinical Excellence (NICE) guideline for PD states that PD should be considered the first choice of treatment modality for patients with RRF and for adults without significant associated comorbidities\textsuperscript{19}
PD can be a strong foundation to transplant success

A transplant is the goal for many ESRD patients but may not always be an option at the start of their RRT.

- According to the 2012 USRDS, more patients on PD were transplanted than patients on ICHD in the United States (modality at day 90; treatment status 2 years after first ESRD service, 2006 – 2008 combined);
- PD can be a suitable treatment for appropriate patients who are waiting for transplant
- The Collaborative Transplant Study showed better survival of PD patients in the sub-cohort defined as “high-risk”

Patients treated with PD before kidney transplantation had improved patient survival and similar graft survival compared with those treated with ICHD.

In a separate analysis adjusted for potentially confounding factors, the risk of death was 44% lower for patients treated with PD compared to those treated with ICHD (HR 0.56; 95% CI 0.33-0.94, P=0.03).

Adapted from Molnar MZ et al. Post-transplant patient survival of 4184 propensity score-matched (1:1) PD and HD patients who underwent renal transplantation and were followed for up to 6 years (2001-2007).
PD avoids vascular access and associated vascular access morbidity

- PD therapy uses a peritoneal catheter which preserves vascular access for patients who may later require HD procedures.
- Despite the increased mortality risk associated with CVCs, use remains high in incident patients in many countries.

Patients initiating RRT with PD have shown improved survival compared to those that started on ICHD using a CVC

- Compared to PD patients, ICHD patients using an AVF/AVG had similar first-year survival and better 5-year survival.

Adapted from Perl J et al. Survival curves for HD patients with access by HD-CVC or HD-AVF/AVG, and PD patients. During the initial 5 years of follow-up, cumulative mortality remained higher among HD-CVC patients compared to PD patients (adjusted hazard ratio: 1.2; 95% CI: 1.1-1.2) and lower among HD-AVF/AVG patients compared with PD patients (adjusted hazard ratio: 0.80, 95% CI: 0.8-0.9). Adjusted on the Cox proportional Hazards model stratified by HD-CVC, PD, and HD-AVF/AVG and adjusted for age, race, gender, era of dialysis initiation, ESRD comorbidity index, primary renal diagnosis, serum albumin, eGFR, province of treatment, and late referral.

There is no risk of PD-associated peritonitis with ICHD.
References:


24. Canadian Institute for Health Information. Canadian Organ Replacement Register (presentation at Canadian Society of Nephrology Annual Conference 2010). 2010;


