

**Annual Dialysis Conference
Sunday, March 5, 2023**

**Intensity of Dialysis: Why Choose
Incremental Dialysis**

Moderator: Eric Weinhandl, PhD



**Presented By:
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Home Dialyzors United**

► Dr. Kalantar-Zadeh has provided you with the data on why an incremental approach to dialysis can be so important to the health and well-being of patients transitioning to dialysis.

► Now I am going to tell you how important an incremental approach to dialysis can be to the patients' quality of life and what patient's value most.



HDU
Home Dialyzors United

Intuitive Medicine: How I learned about Incremental Dialysis

As a home hemodialysis patient, I intuitively learned about individualization of dialysis therapy based on my unique patient characteristics.

By adjusting and shortening my hemodialysis treatment time and frequency I learned to improve my experience and outcomes. Labs confirmed my changes, and clinicians agreed to try it.

"I don't do pain. If dialysis hurt, it was time to stop the treatment. In doing so, I learned the optimal dialysis treatment that worked for me."

There are many advantages to using precision medicine tools to institute incremental dialysis protocol:

including preservation of residual kidney function,
adhering to patient preference, and
allowing for a greater patient-centeredness.

- ▶ Gedney N, Kalantar-Zadeh K. Dialysis Patient-Centeredness and Precision Medicine: Focus on Incremental Home Hemodialysis and Preserving Residual Kidney Function. *Semin Nephrol.* 2018 Jul;38(4):426-432. doi: 10.1016/j.semnephrol.2018.05.012. PMID: 30082062.

Challenges of Transition Period to ESRD

1. Knowing that 25% die within the first 90 days is not encouraging
2. “Crashing” into dialysis costs more, both in human capital and health care
3. Timing is everything, and few patients do it right.
23 to 38 % of patients “crash” onto dialysis , and 33 to 63 % of patients initiate dialysis in an unplanned fashion.
Crash or unplanned dialysis starts are both associated with increased patient morbidity and mortality and lower quality-of-life scores (Molnar, et al 2016)
4. Elderly require individualized and/or specialized dosing, even more than the general dialysis population
5. Race/ethnicity should not factor into care
6. PRESERVING RKF is critical to long term outcomes and QOL for patients
7. Incremental vs. Abrupt starts? Which would you choose?

There is an emerging practice of incremental or gradual start of dialysis, which has been increasingly leveraged for many current and prospective incident ESKD patients.

HDU Emphasizes:

- ▶ All incident patients should be evaluated for an incremental start to dialysis when and if appropriate.
- ▶ There needs to be an infrastructure in place to support the influx of home patients.
- ▶ There is a shortage of home training clinicians that must be addressed.
- ▶ A standardized home training curriculum needs to be supported.
- ▶ Train the home patient on the machine AND on understanding their treatment.
- ▶ Incremental dialysis should be one way to safely move patients' home.
- ▶ Start patients on a transitional schedule, including incremental, to help them adjust to their “new normal” life on dialysis.



Kalantar-Zadeh, Wightman and
Liao. *N Engl J Med* 2020;383:99-101

Why Incremental HD and Residual Kidney Function (RKF) are important to patients and should be important to clinicians.

- ▶ Incremental dialysis has been used successfully in the initiation of PERITONEAL Dialysis therapy. Residual function is measured and counts toward adequacy.
- ▶ *So why is RKF not valued in HD? No patient wants to hear a clinician tell them “we don’t care about your residual since you’re going to lose it anyway”!*
- ▶ We must revisit the topic of incremental HD including randomized controlled trials to explore the hypothesis that transitioning to ESRD with incremental HD may
 - ▶ Preserve RKF longer,
 - ▶ Decrease mortality during the first year of HD therapy, and
 - ▶ Provide an easier transition from CKD to ESRD.

Adapted from:

Rhee et al. *Seminars in Dialysis* 2014

Kalantar-Zadeh et al *Am J Kidney Dis* 2014

Kalantar-Zadeh & Casino. *Nephrol Dial Transplant* 2014

Less Frequent (Incremental) Hemodialysis Transition

► Originally prescribed for PD patients

1. Main Goal: To preserving Residual Kidney Function (RKF)

RKF plays an important role for solute removal, fluid balance, survival

Additional Goals:

1. Smoother (gradual) transition vs. abrupt start
2. More patient freedom and greater quality of life
3. Protecting AV Fistula longer, allowing for gradual maturation without excessive use
4. Less dialytic nutrient loss, less inflammation, less infection, less blood loss

► Potential indications for infrequent (incremental) HD

- 1) Gradual transition to HD/PD with good RKF (see criteria, next)
- 2) Return to dialysis Rx upon gradual allograft failure
- 3) Conversion from failing PD to HD
- 4) Influx of AKI dialysis patients post Covid

► Potential Approaches

- Dose of delivered dialysis increased as RKF declines
→ sum of weekly RKF plus dialytic clearance is maintained
- Concurrent dietary protein restriction
- Talk frequently with the patient about signs and symptoms precipitating a change in dialysis frequency and /or time
- Ask “How do you FEEL?”

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What does KDOQI say?

What do patients want to know?

... the Work Group decided that thrice-weekly HD as a minimum frequency level was no longer appropriate.

Patients ask, “Where is the medical justification for starting everyone on 3x4 dialysis dosing?”

...the Work Group was comfortable recommending a twice-weekly dialysis schedule but only for patients with substantial RKF

Patients ask, “If my residual is so good, why do I need this much dialysis?”

Summary and conclusions:

TRANSITION from CKD to twice-weekly HD

- ▶ In patients with very-late-stage NDD-CKD the optimal transition of care to kidney replacement therapy is not known. Later rather than sooner, based on clinical symptoms, seems to be favored.
- ▶ Major uncertainty and significant knowledge gaps have persisted pertaining to differential or individualized transitions of care across different age, race and other demographics and dialysis format (frequency, mode, timing, etc.).
- ▶ Incremental (twice-weekly) hemodialysis may be a superior way to transition from CKD to ESRD in order to preserve Residual Kidney Function (RKF) longer, to achieve better quality of life and to save costs and resources.
- ▶ Twice-weekly HD may be a better initiation modality for most incident dialysis patients, preserves Residual Kidney Function (RKF) longer, and is NOT associated with worse mortality.
- ▶ There is an urgent need to examine revival of once- to twice-weekly HD and its implementation in the USA, Americas, Europe, China, India, ... to preserve RKF → there is imminent need for clinical trials and more studies on RKF and dialysis frequencies.

The Patient ASKS?

- ▶ Why is essentially every medication EXCEPT DIALYSIS, from insulin to blood pressure to chemotherapy, titrated to the patient's tolerance and efficacy?
- ▶ Why is an incremental approach to dialysis not considered for all appropriate incident patients?
- ▶ Why can't clinicians utilize precision medicine and dosing for the dialysis treatment?
- ▶ Why don't dialysis patients have a fundamental right to live their best life possible?



The Importance of Preserving RKF

Live Longer - Live better

▶ When a patient transitions to dialysis with residual > 500 cc a day, the dialysis prescription should reflect this.

▶ Nowhere is precision medicine more important than in the dialysis prescription, yet often considered the least.

▶ Once residual function is gone, more frequent dialysis is definitely better, but increasing time and frequency should always be titrated.



USA Frequent Hemodialysis Network (FHN): Frequent Nocturnal HD Accelerated the LOSS of Residual Kidney Function!

- ▶ In the frequent dialysis group, urine volume had declined to zero in 52% and 67% of patients at months 4 and 12, respectively, compared with 18% and 36% in controls.
- ▶ Once RKF has diminished, nocturnal can be an optimal treatment choice for HHD, providing better outcomes for QOL and health.

Living Well With Kidney Disease





**EVERY PATIENT IS DIFFERENT.
THEIR DIALYSIS NEEDS TO BE DIFFERENT.**

There is NO one size fits all dialysis.



Dialysis is a
CHOICE:

Incremental
dialysis needs
to be one of
those choices.