Improvement on patient experience and outcome with HDx dialyzer

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CP2-Hemodialysis; T4-Hemodialysis; Centenary Hemodialysis; Corporate Drive satellite; Yee Hong satellite; Bridgepoint Health satellite

INTRODUCTION

The Scarborough Health Network (SHN) hemodialysis program consists of five physical locations that service a total of over 710 hemodialysis patients. Some of these patients have experienced poor hemodialysis outcomes on conventional high flux dialysis, resulting in an increase in patient-reported side effects such as nausea and vomiting, itchiness, and diarrhea after hemodialysis treatment. The team recognized the need to look for a new way of providing hemodialysis in order to improve patient outcomes. This need leads to the use of the HDx dialyzer, a technology that was new to Canada.

OBJECTIVE

Identify a new innovation for providing hemodialysis treatment that improves patient outcomes and subsequently, improves quality of life.

METHOD

(1) The nephrology team conducted a comprehensive review of current patient outcomes and best practice guidelines to identify eligible patients. The following inclusion criteria were established:
   a) low KT/V (<1.2) on 6 weekly bloodwork
   b) patient-reported acute symptoms
   c) pruritus and/or GI symptoms during and post hemodialysis

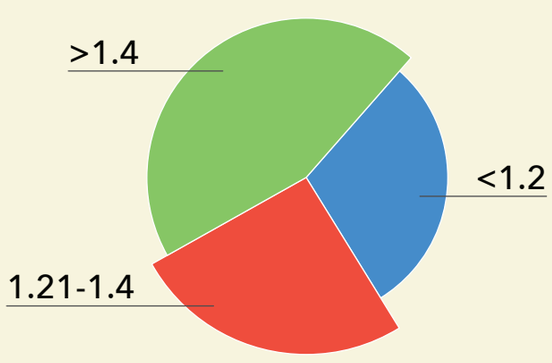
   Eligible patients met at least one of the three selection criteria. A total of 87 patients were selected.

   Out of the 87 patients selected, 13 patients needed to switch back to the previous high flux dialyzer as a result of disequilibrium syndrome during hemodialysis.

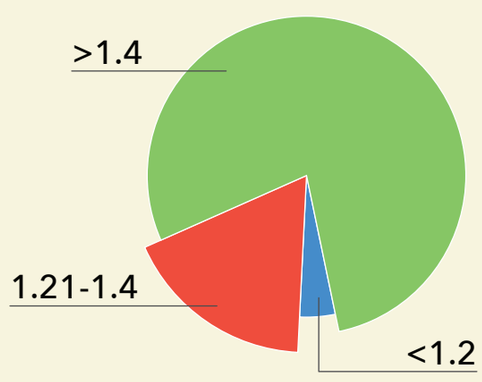
(2) Routine patient bloodwork was reviewed for 4-6 months after implementation of the HDx dialyzer.

RESULT (Method 2)

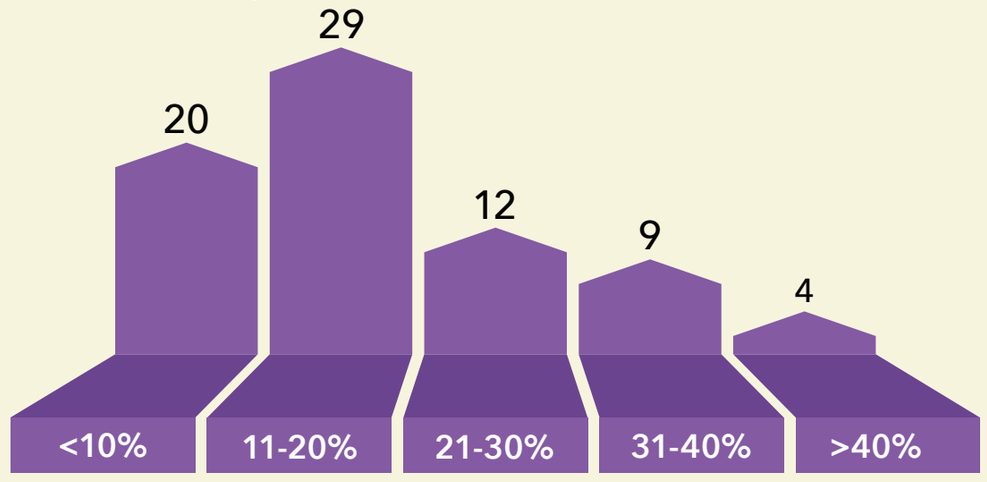
KT/V (Pre HDx dialyzer) n=74
Number of patients



KT/V (Post HDx dialyzer) n=74
Number of patients



Improvement on KT/V (n=74, post 4-6 months)
Number of patients



(3) A short patient survey was distributed after implementation of the HDx dialyzer in order to determine whether it had a positive impact on patient quality of life. The survey focused on four major patient-reported side effects during and post hemodialysis.

(a) lack of energy

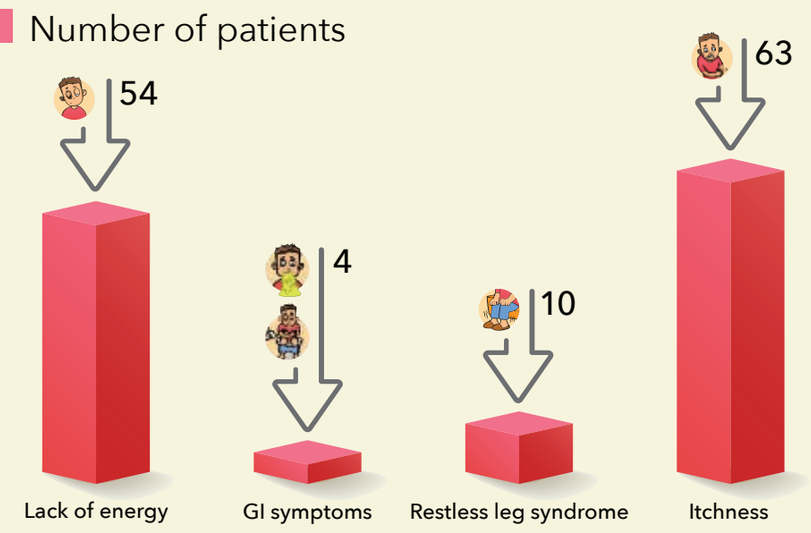
(b) GI symptoms (nausea/vomiting/diarrhea)

(c) restless leg syndrome

(d) itchness

RESULT (Method 3)

Improvement on patient-reported side effects (post 4-6 months)
Number of patients



(4) A cost analysis was performed on the efficiency of implementation of the HDx dialyzer to ensure this new initiative could be supported by existing resources for the hemodialysis program.

RESULT (Method 4)

Cost Saving (CDN $)

CONCLUSION

There was no incident of anaphylaxis reported during the implementation period.

The use of the HDx dialyzer over the conventional high flux dialyzer leads to a significant improvement in patient hemodialysis efficiency, hemodialysis experience and quality of life. Depsite the improvement, the HDx dialyzer, however, is not suitable for all hemodialysis patients as 13 patients were switched back to the previous high flux dialyzer due to experiencing disequilibrium syndrome. The development of patient selection criteria were keys in successful implementation of this new initiative.

The SHN hemodialysis program continues to assess this initiative for suitability and expansion.

REFERENCES

1. KDOQI Guidelines – https://www.kidney.org/professionals/guidelines
2. National Kidney Foundation – http://www.therenalnetwork.org/development/quality-improvement/kdoqi-guidelines/