Assessing the Risk of Deterioration in a Dialysis Population: A Multidisciplinary Approach to Person-centered Care

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INTRODUCTION

Hemodialysis is associated with high levels of morbidity, mortality and resource utilization.

Despite this, most people enrolled in maintenance dialysis programs are unlikely to have the opportunity to discuss their prognosis, wishes or goals of care[1].

Identifying patients at risk of deteriorating can prompt discussions regarding prognosis and a pathway of care through which patient and family wishes and goals of care are established and multi-professional support mobilized accordingly.

AIMS

- To accurately predict people in a maintenance dialysis program at high and moderate risk of acute and/or chronic deterioration
- To offer all patients the opportunity to discuss their prognosis, wishes and goals of care but to prioritize those at high and moderate risk
- To focus multidisciplinary resources and support where it is most needed and wanted
- To identify which factors in the tool are more predictive in assessing risk.

METHOD

- **Plan**

Introduction of a service improvement model which included the development of a risk assessment tool used to stratify case-mix in terms of high, medium or low risk of deterioration

- **Do**

Multidisciplinary review and ongoing discussions were initiated regarding current and future care needs and wishes. People deemed at high risk were prioritized.

- **Study**

Multidisciplinary support was tailored to individual needs and typically varied over time. Statistical analysis of assessment tool to identify pertinent factors.

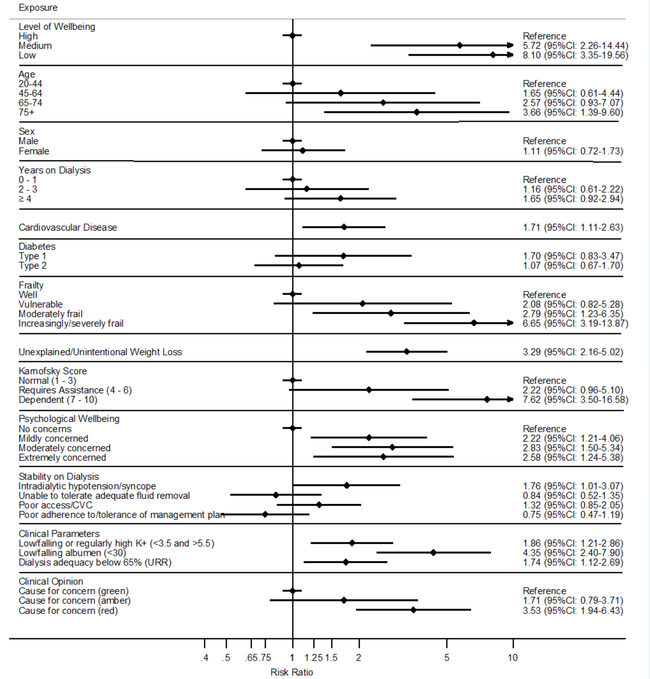
- **Act**

Processes of care were formalized and coordinated through multidisciplinary meetings and the sharing of management plans across transitions of care.

RESULTS

Table 1. Clinical and Demographic characteristics of WoD cohort, overall and by level of wellbeing

Characteristic	Overall (n= 200) n (%)	Level of Wellbeing High (n= 81) n (%)	Medium (n= 51) n (%)	Low (n= 68) n (%)	p - value
Outcome					
No Change	116 (58.0)	61 (75.3)	25 (49.0)	30 (44.1)	<0.001
Death	57 (28.5)	5 (6.2)	18 (35.3)	34 (50.0)	
Transplantation	12 (6.0)	9 (11.1)	2 (3.9)	1 (1.5)	
Movement to Another Unit	14 (7.0)	5 (6.2)	6 (11.8)	3 (4.4)	



Improvements to process measures associated with multidisciplinary support

Risk of deterioration (Deceased group)

	Low	Medium	High
Number of deaths (total 57)	5	18	34
Discussions with patient and/or family regarding prognosis	0	11	30
Increased review schedule	0	8	18
Supportive management plan	0	3	21
Dialysis withdrawal/EoL support at home	0	0	5

MAIN REASONS FOR DEVIATION AWAY FROM PATHWAY
Prognosis: Admitted acutely, patient choice,
Increased review schedule: Admitted acutely, patient choice
Supportive management plan: Admitted acutely, patient choice
Timely dialysis withdrawal: Family dissent, lack of time to prepare family

Results

Outcomes were reviewed at 24 months, 57 (n200) patients had died.

Compared to the low risk group, patients in the medium and high risk groups were nearly 6 and 8 times more likely to die. Factors associated with an increased risk of death were:

Age (65-74 years), cardiovascular disease, moderate and increasing/severe frailty, unexplained weight loss, low functional score and patients identified as having any level psychological stress, low/falling or regularly high K+; those with a low or falling albumin; and those whose urea reduction ratio was <65%.

Lower functional status as reflected by higher Karnofsky score (p for trend <0.001), higher concern for psychological wellbeing (p = 0.001) and increased concern of clinical opinion (p<0.001) were each associated with an increased risk of death.

NEXT STEPS

- Implementation of "wellbeing on dialysis assessment tool" in 2 dialysis units in Southern Alberta
- Development of the tool with reference to the weighting attributed to each variable
- Further analyses to look at combination of variables and effect on relative risk
- Increase the data points to assess the rate of decline in the presence of certain factors

- Assessment of process measures post implementation i.e. number of patients with documented management plan
- Comparison of patient reported goals and wishes of care and end of life care provision

CONCLUSIONS

Identifying patients at risk of clinical deterioration can be used to trigger discussions regarding clinical concerns and prognosis.

Discussing clinical concerns provides an opportunity for patients and families to be involved in decisions regarding their ongoing goals of care and wishes.

Given that multidisciplinary support is resource-intensive, providing it proportionally as needed may be an appropriate way of optimizing clinical benefit.

REFERENCES

1. Schell JO, Patel UD, Steinhauser KE, Ammarell N, Tulsky JA. Discussions of the Kidney Disease Trajectory by Elderly Patients and Nephrologists: A Qualitative Study. *American journal of kidney diseases : the official journal of the National Kidney Foundation*. 2012;59(4):495-503. doi:10.1053/j.ajkd.2011.11.023.

ACKNOWLEDGEMENTS

To all the patients and staff at NHS Manchester Royal Dialysis Unit (UK).

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