Improving Global Assessment in Hemodialysis Patients with Frailty Scoring

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Over 600,000 persons in the US have end-stage renal disease (ESRD) and ~110,000 new patients are diagnosed each year. ESRD accounts for 1% of the Medicare population, but utilizes 7% of the budget. Despite some improvement over the past decade, mortality in ESRD remains unacceptably high: 20-25%, per year over the first 2 years with dismal 5-year survival of ~ 40%. Compared to 5-year survival rates in the three highest causes of cancer mortality: locally invasive non-small cell lung cancer 31%, locally invasive Stage II-III colon cancer 48%, and locally invasive breast cancer 90%, ESRD is a deadly killer.

Current ESRD practice targets discrete goals such as dialysis access, adequacy, anemia, bone mineral, nutrition & fluid status resulting in detailed attention to different domains. One of the drawbacks is that the current approach does not provide a gestalt of the patient.

Frailty is a construct that has been demonstrated to predict poorer outcomes in the geriatric population and within the CKD and ESRD populations. Frailty is a global assessment involving condensation of major domain assessments to provide an overall indicator of risk for decline. Oost et al. studied two methods of frailty assessment in ESRD: the original Frailty Phenotype (FP) a 5-item assessment including physical activity using a timed walk test and grip strength, and survey indices of weight loss, exhaustion, and physical activity; and the Frailty Index (FI), a modified assessment excluding the cumbersome walk test, but with additional measures of comorbidity, psychosocial assessment, functional assessment by mini-mental status exam (MMSE) and activities of daily living (ADLs). In this quality improvement project we test implementation of frailty scoring by FI and FP to identify ESRD patients at risk for decline and attempt to correlate frailty scoring with other known predictors of mortality such as 6-month predictive question and serum albumin in addition to outcomes such as frequency of hospitalization, falls, fractures, and other major changes in health status such as loss of independence, skilled nursing or assisted living placement and change to palliative care status.

Methods

Aim Statement

- Outcomes: 
  - Increase frailty assessment by FI and FP on a single hemodialysis shift from 0% to 100% over 2 month period from November 15 to Jan 15, 2016.
  - Correlate Frailty Index & Phenotype to frequency of falls, hospitalization, loss of function, institutionalization, morbidity
  - Redirect rehabilitative, nutrition, palliative interventions and psychosocial services as needed based on frailty assessments.

- Processes:
  - Define workflow for frailty assessment
  - Record effort added to standard assessments for Frailty Index and Phenotype.
  - Demonstrate how frailty assessment can be incorporated into current workflow for team members
  - Mobilize Core Team for frailty assessment

Implementation of frailty assessment and scoring was much more complicated than initially anticipated and initial target of 100% assessment was modified to a more modest assessment target of 5 patients per cycle with each cycle lasting 3-4 weeks. At present ~10% have completed frailty scoring. Barriers described during implementing frailty scoring include lack of easy accessibility to recorded assessments by different team members, lack of cohesion as to benefit of frailty assessment, poor understanding of frailty and frailty assessment, overall assessment fatigue of both patients and team members and need for further administrative investment in frailty assessment in order to fully address these issues.

The Frailty Phenotype involves assessment of risk in 5 domains: 1. Physical activity decline, 2. Impaired nutrition by assessment of weight loss, 3. Lack of endurance by exhaustion testing, 4. Decreased strength (grip test), and 5. Impaired mobility by walk speed. The Frailty Index was developed to duplicate frailty assessment without use of walk test by substituting various survey items. Studies suggest FI may overestimate incidence of frailty in ESRD. In mapping the current pattern of standard assessments in our dialysis unit we find that assessments in these domain areas are already being done in one form or another, but do not exactly match current frailty assessment instruments. For example dialysis nurses assess patients daily with each treatment, the KD-QOL survey items administered by the social worker at admission and 90 day reassessment reflect FI/FP activity/exhaustion items and the dietician performs subjective global assessments (SGA) of nutrition and protein energy wasting on a regular basis.

References

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