CLINICAL VIGNETTE

Multi-Morbidity in an Older Adult

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A 97-year-old female presented to the local hospital emergency department for confusion and suspected sepsis syndrome. She was admitted with acute delirium due to recurrent pneumonia, acute chronic diastolic heart failure and acute urinary tract infection. This was her fourth admission over the last four months, and with cognitive and functional decline following each hospitalization. The indications for prior hospital admissions included: recurrent falls, deep vein thrombosis (DVT), urinary tract infection (UTI), aspiration pneumonia, hyper and hypoglycemia due to fluctuating oral intake, and supra-therapeutic anticoagulation. Her extensive medical history includes Alzheimer's dementia with behavioral issues, hypertension, diabetes mellitus type 2 (DM2), heart failure with reduced ejection fraction (HFrEF), chronic atrial fibrillation, sick sinus syndrome with pacemaker, chronic obstructive pulmonary disease (COPD), and osteoarthritis (OA) of the knees bilaterally. She has been residing in a Long Term Care facility for three years, with continuity of care provided by her long time geriatrician. Her medication list included atenolol, atorvastatin, bumetanide, digoxin, insulin, hydralazine, isosorbide dinitrate, and warfarin.

The patient's hospitalization included: low blood pressures without orthostatic changes, and mild shortness of breath without increased work of breathing. She was awake and scored 1/5 in the mini-cog with abnormal clock drawing and recall of only 1 of 3 items. Recent labs: A1C 7.5%, digoxin level of 1.0 and unremarkable chemistries and lipids. EKG and echocardiogram were unchanged.

She had completed an Advance Directive (AD) ten years prior when she had medical decision making capacity and listed her daughter as Durable Power of Attorney (DPOA). However, she left preferences for life sustaining treatment unanswered as she wanted her family to make the decision at the time if necessary. The patient had two daughters and both voiced the patient's goals would be not to prolong life when she was admitted to SNF. A POLST completed specified do not resuscitate status. Over the last several years, the patient's health declined, and her family reported steady deterioration in memory and cognition, and increasing care needs. She was weak and frail, with recurrent falls. She also developed progressive dysphagia and was high risk for aspiration.

Shortly after discharge from the hospital, a family meeting was scheduled including the primary physician, social worker and director of nursing at the SNF and her daughter, who was designated Durable Power of Attorney for healthcare, to discuss goals of care. Several goals of care discussions had been held in the past following hospital discharges during previous hospital admissions. However, despite sharing her concerns describing her mother as less interactive and communicative after each hospitalization, the patient's daughter found it hard to enroll the patient on hospice care.

Together we took a multidisciplinary approach and reviewed the patient's multiple morbidities. Eprognosis (https://eprognosis.ucsf.edu/), a risk calculator tool for mortality, suggested a prognosis of less than one year for this patient based on her comorbidities. It was explained to the DPOA that this estimates life expectancy based on other people with similar conditions. Daughter voiced understanding of the concept. After discussion, her daughter expressed desire for the patient to be comfortable and pain free. Her care transitioned towards comfort-directed management and she was enrolled in hospice. Her medication management was simplified, with decreased insulin intensity and elimination of accu-checks. Her medications decreased and consolidated to morning dosing, which improved compliance, and sleep, as she previously refused most evening meds. Her resuscitation status remained Do Not Resuscitate (DNR). Her primary goal was changed to comfort care, including avoiding hospitalizations, no escalation of care to the ICU, no mechanical ventilation, and no artificial nutrition with resumption of oral feeding for comfort accepting the risks of aspiration. She continued physical therapy to maintain mobility and decrease fall risk, and was continued on several medications based on the daughter's understanding of what her mother would have wished for, if she had capacity. The hospice team assumed primary care in the SNF. Geriatrics continued to follow the patient.

Discussion

In Geriatric medicine, patients frequently have multiple chronic conditions. In these situations, following evidence-based medical treatment guidelines are not always feasible nor beneficial. Increasing complexity of treatment plans increases risk of medical complications and poor compliance. Quality of life decreases with more frequent clinic visits, glucose monitoring, diagnostic tests, and polypharmacy. Some major risk factors affecting prognosis include: Age, multi-morbidity, polypharmacy, cognitive decline, limited ADLs/IADLs.[1]

The presence of three or more conditions in a patient has been recognized as multi-morbidity by the American Geriatrics Society (AGS).[2] They have developed guiding principles, which include:

- Patient preference
- Interpreting the Evidence
- Prognosis
- Clinical Feasibility and
- Optimizing Therapies and Care Plans

We incorporated the above guidelines in the above patient's care.

This patient's decisions were made by her daughter, who was designated DPOA of Healthcare. She faced sensitive decisions during the patient's repeated hospital admissions. The patient's priorities were considered and the teach back technique was used to assess her daughter's understanding of the patient's most current health conditions. We attempted to understand the patient's values and implemented a care plan with a shared decision-making process. Emphasis was made to ensure all significant members understood the rationale for clinical decisions, ideally sharing written explanations of the plan. This patient and her children expressed the following priorities: to stay alive, optimize quality of remaining life, reduce out-of-pocket expenses, and to remain in a safe environment where she is well cared for. Thus, management was curtailed to fit patient and family's preferences, priorities and feasibility of approach.

The patient's hypertension, diabetes, heart failure, COPD and arrhythmia remained well controlled. She stayed motivated to continue physical therapy and maximized benefit from the program for strength and reconditioning to avoid recurrent falls and improve quality of life.

The risk for polypharmacy was reviewed and her chronic medications were re-evaluated given a prognosis of about one year. For example, improved cardiovascular mortality for statins in primary prevention requires a minimum 5 years to achieve mortality benefit.[3] The benefits of intervention should outweigh the harms as muscle aches and fatigue could be worsened with statin continuation. We discontinued insulin therapy to avoid hypoglycemic risks and the A1C goal was liberalized.[4] This decreased the risk for re-hospitalizations, and the need for frequent glucose monitoring. With less frequent medications and monitoring, the patient was more comfortable and compliant with care in the nursing home. With fewer medications and evening disruptions, her insomnia also improved.

The University of California at San Francisco has created a tool called ePrognosis which is a repository for published geriatric prognostic indices.[5] It is intended to be used as a centralized forum where clinicians can calculate objective estimated mortality, for older adults who do not have a dominant terminal illness.[5] ePrognosis can provide general prognosis for patients in order to better match treatment options and goals of care. Also, physicians can remain confident that they are following the most up to date guidelines with regards to their patient's specific situation. Although it does not provide a strict algorithm for medical management, it can be used as a rough guideline throughout the shared medical decision-making process.[6] We used ePrognosis in our patient to estimate life expectancy which contributed to the plan for management and paralleled her goals of care.

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