Case Study – Co-morbidity of Diabetes, Stroke, and Dementia

Learning objectives - Participants at the end of session should be able to:

1. Explain how vascular health conditions of dementia, diabetes, and stroke are related.
2. Share an example of a gap and duplication in the health care system.
3. Describe a resource that might be valuable across conditions and the best time to provide it.

The Case

Name: Sandra Lavigne (SL) **Age:** 72

Presenting situation: Although SL was brought by ambulance to the Civic Campus of the Ottawa Hospital recently due to left MCA ischemic stroke, she did not receive tPA as she was outside the tPA window. Her α-FIM assessment done on day 3 was 39.

Brief medical history of SL:

1. Has had diabetes for 20 years, and has used both long and short acting insulin (multiple daily injections) for the last 10 years to achieve good glycemic control. In the last two years, since being diagnosed with Mixed Alzheimer's and vascular dementia, she has had an increase in episodes of hypoglycemia. She is currently taking a cholinesterase inhibitor for her mixed dementia and warfarin for Atrial Fibrillation. SL's husband has noticed that SL sometimes has issues with her medications, including forgetting to take pills, or taking the wrong ones. He has also noticed an increase in need for help with ADLs and iADLs, and that she has periods of anxiety and suspicion.
2. Had been seen by the Geriatric Emergency Management (GEM) team during one ED presentation for a fall. After Medicine had declined admission to hospital, GEM had urgently referred the patient to the Geriatric Assessment Outreach Team (GAOT), who tried to see her within 48 hours. Unfortunately, she refused to let the GAOT assessor into her house. At GAOT's recommendation an urgent Geriatric Psychiatry Community Services of Ottawa (GPCSO) referral was made to help manage the suspicion and Responsive Behaviours resulting from the dementia. The Family MD saw the patient ASAP regarding her diabetes with a goal to simplify her regimen and ensure supervision by her family.
3. Unfortunately these efforts proved unsuccessful and the patient was admitted to hospital with falls, delirium and a left MCA ischemic stroke. At time of admission her hemoglobin A1c was 11.8% and her INR was 1.2 – both results likely reflecting poor medication compliance related to her dementia with the low INR possibly contributing to her stroke. SL has a diagnosis of mixed dementia, and experienced a great deal of confusion and stress with the admission and procedures in hospital. She was in hospital for 12 days (1 day as ALC).

Social History: SL's Background at discharge: SL lives with her husband in their own home (detached) in the suburbs. They have a son and two daughters, but only one daughter lives in town. SL's husband would like for her to continue living at home, however, he is feeling a little overwhelmed and worried about the increased demands of care.

Hospital stay: SL was delirious on admission. While in the hospital, SL is followed by the acute care diabetes team and her glycemic control is improved with long and short acting insulin. After blood

sugars were stabilized and she recovered from the more florid manifestation of delirium including drowsiness, cognitive fluctuations and possible hallucinations, she was assessed by the OT. On the MMSE SL scored 14/30 and was unable able to retain information in order to participate in a rehab program, therefore, did not qualify for stroke rehab. SL requires 24 hour supervision. She walks independently, however, she requires moderate to maximal assistance to do her ADLS. She was referred to Geriatrics but was not accepted as an inpatient for several reasons:

1. it was already possible to safely discharge SL home after her husband learned to manage the diabetes and with adequate community resources
2. the Geriatric Inpatient Unit (Geriatric Medicine Unit) runs close to 100% full capacity all year with a waiting list and does not have the capacity to accept anyone who is ready to be safely discharged
3. the main priority of the Enhanced Geriatric Consult Team is to help stabilize patients, to assist with discharge planning and to arrange post-discharge follow up in the Geriatric Day Hospital

The Enhanced Geriatric Consult Team:

- ensured SL's husband had access to respite options through CCAC
- ensured SL's family had well developed crisis and long-term plans
- educated SL's family regarding dementia and delirium
- arranged to follow up in the Geriatric Day Hospital (to ensure stability of discharge and to consider addition of memantine once the delirium resolved)
- connected SL's family to the Alzheimer Society via a First Link referral form.

Post-Discharge Plans and Care: Home First was recommended, SL and her husband qualify for the maximum of hours for PSS. OT CCAC will do a home safety assessment. SL was discharged home with her husband with Home First CCAC . Her husband was given instructions on insulin injection and SL was discharged home on multiple daily injections. A rapid response nurse was put in place for this high risk discharge and made a home visit the next day to reinforce teaching.

SL was also referred to GAOT in the community. The GAOT referral was subsequently cancelled as it was felt to unnecessary and a poor use of limited resources (i.e. GAOT already has a long list of new patients waiting to be seen and the patient had already been fully assessed by the Enhanced Geriatric Consult Team in hospital). Arrangements had been made for the Enhanced Geriatric Consult Team to see SL in follow up in the TOH Geriatric Day Hospital. Referral to GPCSO had also been reinitiated on discharge, as well as a follow up with a Diabetes Clinic.

Questions:

1. How do the vascular health conditions (stroke, diabetes and dementia) complicate her discharge plans?
2. What gaps and duplications of resources do you anticipate?
3. What could improve the care and quality of life for SL?