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MANAGEMENT OF AGITATION IN AN ACUTE CARE HOSPITAL SETTING: DESCRIPTION OF A PRACTICAL CLINICAL APPROACH EMPLOYED AT THE OTTAWA HOSPITAL

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Abstract

Older patients who present with sudden onset of agitation in acute care settings pose a frequent and complex clinical challenge. Each patient has a unique set of circumstances that precipitate the crisis and, consequently, require a personalized care plan. It is therefore imperative to develop a clear, organized, and systematic approach to identify predisposing, precipitating, and perpetuating factors that contribute to the symptom of agitation for each patient. A clear framework is required to identify and describe the target symptoms of agitation manifested by each patient, a vital step in planning a course of treatment. Clinicians must also provide support not only to the patient, but also their family and the clinical team, due to the disruption and stress the clinical challenge places on all care providers. A critical first responsibility of the clinician is to ensure safety of all parties, followed by optimization of the patient's health, while maintaining a sense of calmness throughout the process.

This article reviews a practical approach developed to manage agitation at The Ottawa Hospital (TOH), which may be useful in many acute care settings. We invite all clinicians to consider the tools and processes described in this article for consideration and implementation in their own practice settings. Readers must use their own judgment in selecting and dosing medications. The authors have described their own practice but the authors, the editors and the Canadian Geriatrics Society do not assume any responsibility for medications readers choose to employ.

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KEY POINTS:

1. Agitation in older adults is a symptom that is frequently associated with underlying cognitive impairment and may be expressed verbally or physically. Agitation is measured by its severity, frequency and impact on the environment, patient, or others. The severity may range from non-aggressive to aggressive, frequency from occasional to constant, and its impact from simply irritating or annoying to potentially highly destructive, dangerous, or lethal.
2. Agitation may be associated with delirium and consequently administrating the Confusion Assessment Method (CAM) scale[1] is recommended for each patient. If the CAM is positive, identify potential cause(s) of delirium and start treatment as soon as possible.
3. Whether the CAM is positive or not, it is critical to explore, clarify, understand, and document the patient's personal behavioural triggers. Obtain collateral information from multiple sources to establish the patient's baseline behavioural status (e.g. from family, friends, staff at long-term care or retirement home, and family physician).
4. A non-pharmacological plan of care tailored to the individual patient considering their behavioural triggers should be created. It must be simple, clear, and easy to understand to be implemented successfully. Staff must be trained in techniques such as the Gentle Persuasive Approach (GPA), which has proven highly effective.
5. Non-aggressive forms of agitation may often be managed with non-pharmacological interventions alone; if medication is required, antipsychotics should be avoided.[2]
6. Aggressive forms of agitation may require medication use more often as such forms of agitation can be GPA resistant or GPA may be only partially effective; antipsychotics may be necessary.
7. Medication use must be considered if aggression persists with non-pharmacological interventions alone and poses a significant risk of harm.
8. Both non-antipsychotic agents with or without antipsychotic agents are used as outlined below. The choice of agent, dosage, route of administration, and timing must be carefully tailored to the individual patient.
9. Certain patient populations (e.g. patients with Parkinson's disease (PD) or Lewy body dementia (LBD)) are highly sensitive to antipsychotic medications. When they experience agitation, special attention must be paid with respect to the choice of a safe antipsychotic medication to avoid poor clinical outcomes.
10. The Behavioural Vital Signs (BVS) Tool can be very useful to identify, document, and monitor behavioural symptoms.[3]

Background

Agitation is a non-specific term that can manifest as a state of excessive psychomotor activity accompanied by increased tension and irritability.[4] In patients who are cognitively and verbally impaired, agitation is observed as inappropriate verbal, vocal, or motor activity. Agitation may reflect disturbances or unmet needs in many domains including medical, surgical, psychological, physical, social, and environmental domains. Managing the complex interaction of these multiple domains is often challenging and requires compassion, patience, persistence, and intellectual curiosity.

Agitation is commonly encountered while caring for older adults in acute care settings. Agitation is often associated with delirium but may also be superimposed on premorbid behavioural and psychological symptoms of dementia (BPSD). Frequently, the clinical scenario is complicated by an interplay of multiple pre-existing factors and comorbidities including medical and psychiatric conditions, alcohol and substance misuse, acute and chronic pain, maladaptive personality characteristics, and intricate social, legal, and family circumstances. To learn more regarding managing BPSD please review "Practical Tips for Recognition and Management of BPSD"[5] please click here.

Enhancing the family and caregiver experience: In the midst of each patient's crisis, their family and caregivers are often frustrated and extremely stressed due to a lack of information about the patient's clinical situation, course of the illness, and prognosis. Each crisis represents an opportunity for the clinician to enhance rapport by proactively intervening to optimize communication with the family member(s) or caregiver(s). Clinicians need to be available and sensitive, as well as being able to provide timely and relevant information, support, and resources. Being proactive in this manner usually produces a more positive outcome and builds greater rapport and alignment with the family who feel included as part of the clinical team, enhancing the experience for all parties.

Emergency Department Case example:

Mr. JT is a 78-year-old man from a retirement home who is brought to the emergency department for a sudden change in behaviour – he has been increasingly "agitated" over the past 48 hours. Medical history that accompanied him was scant. He has no history of diagnosed dementia but has been noted to have some cognitive as well as functional decline over the past few months. He is noted to be extremely "agitated," with increased pacing, verbal and physical resistance to all care, verging on the point of physical aggression. He requires appropriate medical and laboratory examinations to investigate the cause(s) of this presentation, but he is not allowing this to occur as a result of his behaviours. The clinical team needs to decide how to manage his behavioural care safely and effectively as well as efficiently.

How would you proceed?

This article is based on a review of the scant literature combined with the wealth of clinical experience to provide clinicians a useful framework and approach as employed by the Geriatric Psychiatry Behavioural Support Team (GPBST) at The Ottawa Hospital (TOH). This is an example of one program and one approach for readers' consideration. Readers will have to use their clinical acumen and judgment to decide which elements they feel they can safely integrate into their practice and readers must assume all responsibility for their clinical decisions. The authors, editors, and journal do not assume any responsibility for decisions of readers based on this article.

The following approach, used at TOH by the GPBST, will help identify, delineate, and clarify the complex behavioural symptoms in older adults, and provide a logical pathway to assist in managing them safely and effectively:

1. Ensure the patient is in a safe and comfortable environment where the patient is less likely to accidently or deliberately pose a danger to himself or others. It may be necessary to have a familiar family member or staff stay with him or her to provide reassurance and to monitor safety.
2. Support the clinical team, identify their stressors and limitations, and provide them with a patient-centred perspective with an adage: "*The patient is not giving you a hard time; they are having a hard time!"*
3. Initiate appropriate non-pharmacological intervention (see Table 1 and/or the GPA strategies[6]).
4. Conduct a thorough delirium workup while gathering collateral information from family and others. Clarify whether the patient has pre-existing BPSD. To learn more regarding managing BPSD, please click here.[5]

5. If the patient is too agitated to allow safe care and medical workup for delirium, consider offering pharmacological therapy.
6. Use extreme caution in choosing a pharmacological agent as some patients are extremely sensitive to psychotropic medications. For example, every effort must be made to carefully inquire about a history or clinical features consistent with Parkinson's disease (PD) or Lewy body dementia (LBD) and to avoid giving such patients high-potency antipsychotics (e.g. haloperidol, risperidone, or olanzapine).
7. For non-aggressive target symptoms that are resistant to GPA alone, consider trazodone as a first-line pharmacological agent if the patient is compliant with oral medication.
8. For aggressive target symptoms that are resistant to GPA alone, the patient may also benefit from trazodone but may, instead or in addition, require antipsychotic medication as a second-line medication.
9. If no history or clinical features consistent with LBD or PD are present, and the patient is compliant with oral medication, consider risperidone tablet or liquid. If the patient is not compliant with taking oral medication, then consider intramuscular loxapine.
10. Haloperidol is not advisable in these situations, except for intravenous use, if clinically indicated.
11. If history or clinical features consistent with LBD or PD are present, then offer quetiapine orally. If patient is not compliant with oral medication, then consider intramuscular loxapine. Lorazepam may also be used to offer greater sedation. Haloperidol is to be avoided.
12. Monitor closely for new or worsening symptoms such as jerky muscle movements (dystonia), tremors, rigidity, leaning to one side, slowed and/or shuffling gait, stooped posture, fidgetiness or restlessness, difficulty swallowing, choking, or drooling. Specific observations for these symptoms must be done routinely and such new findings reported to the most responsible physician. Also monitor for orthostatic drop in BP, excessive sedation, unsteady gait, and falls.

Figure 1. Non-pharmacological Strategies can be found at the end of the article.

The Ottawa Hospital's Pharmacological Approach to Agitation Resistant to Non-Pharmacological Approaches:

The following describes in further detail the pharmacological approach employed by the GPBST at TOH. This approach is for the readers' consideration and discretion in applying as they deem appropriate. Readers must assume all responsibility for their clinical decisions. The authors, editors, and journal do not assume any responsibility for decisions of readers based on this article. For all listed medications we strongly recommend treating with the lowest effective dose with close monitoring and documenting efficacy, tolerability, and side effects. This will support sound clinical decision-making regarding choice of agent, route of administration, dose titration timing, and reasons for continuation or discontinuation.

The Behavioural Vital Signs (BVS) Tool[3] (Figure 3) may be very helpful for clinicians to consider as an aid to identify symptoms and clusters of symptoms. The effectiveness of any clinical intervention can also be easily tracked noting the behavioural frequency, severity, and impact over time. For more information on the BVS Tool please click here.

Figure 2. BVS Tool Highlights

Step 1. Identify symptom of agitation as aggressive or nonaggressive (see below)			
Physically Aggressive Agitation	**Verbally Aggressive Agitation**	**Physically Non-Aggressive Agitation**	**Verbally Non-Aggressive Agitation**
Hitting	Screaming	Gentle restlessness	Negativism
Pushing	Cursing	Repetitive purposeless motor activity	Chanting
Scratching	Temper Outbursts	Pacing	Repetitive sentences
Grabbing	Aggressive and inappropriate social comments	Hiding objects	Constant interruptions
Kicking	Aggressive verbal sexual advances	Inappropriate handling of objects	Constant requests for attention
Biting		Shadowing	
Spitting		Exit-seeking	
		Inappropriate dressing/undressing	

Step 2. Types of Behaviours: Estimate Behavioural Frequency, Severity, and its Impact		
Behaviour Frequency (Rate 1 to 5)	**Severity** (Rate 1 to 5) **How difficult is it to distract or redirect the patient?**	**Impact** (Rate 1 to 5) **Potential harm to self/others**
5. Constant	5. Impossible to direct patient	5. Extreme (serious harm)
4. Several times a day	4. Directable with major problem	4. Intense (significant harm)
3. At least once daily	3. Directable with moderate problem	3. Moderate (moderate harm)
2. Present but negligible	2. Directable with minor problem	2. Minor (minor harm)
1. Almost never	1. Directable	2. None

Non-Aggressive Agitation:

Patients with nonaggressive symptoms of agitation, manifested verbally and/or physically, usually do not require antipsychotic medication. They may be best managed with non-pharmacological interventions such as GPA. In GPA-resistant patients, low doses of trazodone may be very helpful to alleviate symptoms. Trazodone, in low doses, may be used both as regular and PRN doses during the daytime for agitation or anxiety. It may also be used at bedtime, in higher doses, for promoting sleep. It is important to clearly specify on the order for daytime use of trazodone: *"Please HOLD if the patient is unsteady or drowsy."* Please see Tables 1, 2, and 3 for examples of orders for daytime, prn, and nighttime use of trazodone used at TOH in our clinical practice.

Table 1. Trazodone: Daytime Use (sample of orders used in our program)

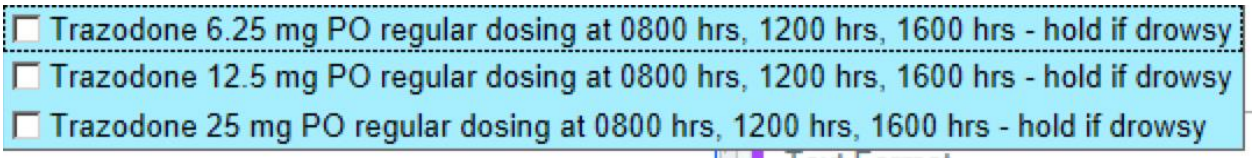


Table 2. Trazodone PRN Use – First Line (sample of orders used in our program)

○ Trazodone 6.25 mg PO every 6 hours PRN USE FIRST LINE for agitation, anxiety, or insomnia - not past midnight
○ Trazodone 12.5 mg PO every 6 hours PRN USE FIRST LINE for agitation, anxiety, or insomnia - not past midnight
○ Trazodone 25 mg PO every 6 hours PRN USE FIRST LINE for agitation, anxiety, or insomnia - not past midnight
○ Trazodone 25 mg PO every 6 hours PRN USE FIRST LINE for agitation, anxiety, or insomnia - not past midnight
○ Trazodone 50 mg PO every 6 hours PRN USE FIRST LINE for agitation, anxiety, or insomnia - not past midnight

Trazodone

Large, double-blind, randomized, placebo-controlled evidence for the use of trazodone in delirium or BPSD is lacking, but trazadone continues to be a clinically useful pharmacological intervention when used judiciously. A selection of recent literature pertinent to trazodone has been reviewed.[7-13] A double-blind, placebo-controlled study of trazodone in Alzheimer dementia (AD) patients with sleep disorders[12] suggests benefits for the use of trazodone 50 mg in these patients without any significant impact on daily sleepiness, adverse events, or cognition.[7]

Trazodone is extensively metabolized in the liver and is dependent on renal excretion. However, renal impairment is not a contraindication of treatment with low-dose trazodone. Usually, no dosage adjustment is necessary for mild to moderate renal impairment. Product labelling advises careful dosing and regular monitoring in patients with severe hepatic renal impairment.

Trazodone exerts hypnotic actions at low doses (range: 25 to 150 mg) due to its blockade of 5HT2A receptors, H1 histamine receptors, and a1 adrenergic receptors. Despite its approval for the treatment of depression, sleep disorders are the most frequently prescribed (off-label) reason for trazodone prescription.[12, 13]

The most common adverse effects reported with trazodone are drowsiness (somnolence, sedation), headache, dizziness, and dry mouth. Other events reported, albeit with low incidence, include orthostatic hypotension (particularly in elderly patients or those with heart disease), minimal anticholinergic activity, corrected QT interval prolongation and torsade de pointes, cardiac arrhythmias, and rare occurrences of priapism and suicidal ideation.[9]

Trazodone may induce parkinsonism, and combined with drowsiness, dizziness, and hypotension, may contribute to the risk of falls and fractures among older adults with dementia. This risk appears to be similar to atypical antipsychotics use.[14]

Atypical antipsychotics are, however, associated with an increased risk of myocardial infarction and stroke in patients with dementia.[15] Furthermore, atypical antipsychotic use is associated with an increased risk for death compared with non-use among older adults with dementia. This risk for death may be greater with conventional antipsychotics than with atypical antipsychotics.[16, 17] Trazodone may be a safer choice in persons with dementia as it is associated with a lower rate of mortality than atypical antipsychotics.[16]

Sundowning and Sleep

Trazodone may be useful at higher doses in the evening and night (compared to doses for daytime use) to help alleviate symptoms of sundowning and to promote sleep. At TOH, we have developed a process of offering patients a dose of trazodone at 8:00 p.m. and at 10:00 p.m. for sleep with a specific order to "HOLD 10:00 p.m. dose if the patient is asleep."

This allows the clinician to tailor the dosage for each patient more precisely. This is accomplished by assessing the pattern of trazodone usage over time; if both doses are needed consistently for the patient to get to sleep, then they can be combined as a single dose administered at 8:00 p.m. It is best to avoid use past midnight, if possible, to reduce the likelihood of morning sedation and further aggravation of sleep-wake cycle reversal.

We also employ the order "Do not wake the patient up between 10:00 p.m. and 6:00 a.m. unless medically necessary," to allow patients to experience uninterrupted, restorative nighttime sleep to aid recovery. To complement this strategy, we also promote "Wake Therapy" – that is simply to keep patients awake during the daytime (e.g. with appropriately stimulating activities and enriched social, environmental, and recreational milieus).

Table 3. Trazodone: Nighttime Use (sample of orders used in our program)

○ Trazodone 12.5 mg PO regular dosing at 2000 hrs and 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 25 mg PO regular dosing at 2000 hrs and 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 50 mg PO regular dosing at 2000 hrs and 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 100 mg PO regular dosing at 2000 hrs and 25 mg. at 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 125 mg PO regular dosing at 2000 hrs and 25 mg. at 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 150 mg PO regular dosing at 2000 hrs and 50 mg. at 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 175 mg PO regular dosing at 2000 hrs and 50 mg. at 2200 hrs. Hold 2200 hrs dose if patient is asleep
○ Trazodone 200 mg PO regular dosing at 2000 hrs and 50 mg. at 2200 hrs. Hold 2200 hrs dose if patient is asleep

Aggressive Agitation

Assessing and Documenting the Need for Antipsychotic Medication:

Patients experiencing verbal and/or physical aggressive agitation may require one or more doses of an antipsychotic medication. The goal is to help the patient gain better control over their behaviour, reduce the risk of harm to self or others, as well as to facilitate medically necessary care in a safe environment.[18] Prior to administering an antipsychotic, it is essential to clearly document the indications for using an antipsychotic. Specific attention must be paid to documentation of specific target behavioural symptoms or clusters. An estimate of the impact of any clinical intervention on the severity, frequency, and impact of the behaviour is critical to document using tools such as the BVS Tool.[3]

Three clinical scenarios justify use of an antipsychotic pharmacological intervention:

1. if the behaviour is resistant or is only partially responsive to GPA techniques resulting in behaviour expressed as verbal or physical aggression severe enough to impact the patient's safety or safety of others;
2. if the behaviour is expressed as aggressive resistance impeding the provision of safe and essential patient care;
3. if the patient is threatening or attempting to cause bodily harm, behaving violently or posing significant potential and imminent threat or risk of harm to the patient or others.

Route of Administration

Timely administration of oral antipsychotics is preferred over the parenteral route. The former is much more patient-centred, physically and psychologically less traumatic, causes fewer potential complications, and usually works very well if dosed and timed carefully. It is well worth investing a few extra minutes to encourage the patient to take the medication orally. Family members can often assist in convincing the patient to take the medication orally rather than forcefully administer the medication parenterally.

Consent

If the patient is not capable of treatment decisions, an appropriate substitute decision-maker's (SDM) consent, based on a discussion of the risks and potential benefits, is mandatory. The challenge of oral administration may be lessened by mixing the oral medication with something the patient may consume (e.g. water, juice, applesauce, etc.) that can be administered with the SDM's informed consent.

Choosing an Antipsychotic

Choosing an appropriate antipsychotic is extremely important. For example, patients with a diagnosis of Lewy body dementia (LBD) or Parkinson's disease (PD) are exquisitely sensitive to high potency antipsychotics (e.g. haloperidol and risperidone), which increase mortality and morbidity significantly.

For all Antipsychotics

- Review the requirements for lower dosing for patients with dementia
- Clearly document indications for using an antipsychotic
- Note potential risk factors for vulnerability to side effects (review these side effects with the SDM when obtaining consent)
- Observe and document efficacy
- Closely monitor and document treatment emergent side effects
- Limit the duration of antipsychotic usage
- Start low, go slow, and wean off as soon as safe to do so
- Avoid use of anticholinergic agents such as benztropine

Haloperidol

As many clinicians are historically acquainted with haloperidol, it is still the most commonly used antipsychotic in the context of delirium. There is growing evidence that higher than recommended initial doses of haloperidol are frequently used in the treatment of delirium with acute agitation in hospitalized older people[19] as well as inappropriate patient selection and duration of use. High doses and long duration of haloperidol use have a greater frequency of adverse side effects. The evidence supporting the use of antipsychotics in delirium is limited.

With many safer options to choose from, it is probably best to use haloperidol very sparingly and judiciously. Haloperidol is not recommended if there is pre-existing PD or LBD.[20, 21] We recommend its use as a last resort because many patients' underlying neurocognitive pathology is often mixed or unclear and they may be, without anybody's prior knowledge, exquisitely sensitive to high-potency antipsychotics. In emergency situations in the context of delirium, where intravenous use is the only option, we tend to use it sparingly with extreme caution due to potential cardiac and other side effects. The American Psychiatric Association guideline on delirium recommends starting haloperidol dosages ranging between 0.25 and 0.5 mg orally or parenterally every 4 hours as needed for older people.[22] The UK National Institute for Health and Clinical Excellence (NICE) guideline recommends an initial dose of 0.5 mg in older people with delirium.[23]

Risperidone (oral)

Risperidone (oral) may be a reasonable choice for patients who are not overly sensitive to high potency antipsychotic agents. It remains *the only antipsychotic with an official restricted indication in Canada for the short-term symptomatic management of aggression or psychotic symptoms in patients with severe dementia of the Alzheimer's type unresponsive to non-pharmacological approach and when there's a risk of harm to self or others.* The indication no longer includes the treatment of other types of dementia such as vascular and mixed types of dementia. Risperidone is available in regular and rapid dissolving tablets, as well as liquid formulation. The liquid is odorless, colourless, tasteless, and mixes readily with most liquids for consumption, except tea or cola.

Common side effects include extrapyramidal symptoms, hypotension and dizziness. Serious side effects may include the potentially permanent movement disorder tardive dyskinesia.[4]

Table 4. Risperidone Nighttime Use (sample of orders used in our program)

○ Risperidone Liquid REGULAR 0.06 mg PO at 2000 hrs and 2200 hrs - HOLD 2200 dose if asleep
○ Risperidone Liquid / Tabs REGULAR 0.125 mg PO at 2000 hrs and 2200 hrs - HOLD 2200 dose if asleep
○ Risperidone Liquid / Tabs REGULAR 0.25 mg PO at 2000 hrs and 2200 hrs - HOLD 2200 dose if asleep
○ Risperidone Liquid / Tabs REGULAR 0.5 mg PO at 2000 hrs and 2200 hrs - HOLD 2200 dose if asleep

Table 5. Risperidone Daytime Use (sample of orders used in our program)

☐ Risperidone REGULAR 0.06 mg PO at 0800 hrs, 1200 hrs, and 1600 hrs - HOLD if drowsy or unsteady
☐ Risperidone REGULAR 0.125 mg PO at 0800 hrs, 1200 hrs, and 1600 hrs - HOLD if drowsy or unsteady
☐ Risperidone REGULAR 0.25 mg PO at 0800 hrs, 1200 hrs, and 1600 hrs - HOLD if drowsy or unsteady
☐ Risperidone REGULAR 0.5 mg PO at 0800 hrs, 1200 hrs, and 1600 hrs - HOLD if drowsy or unsteady

Table 6 Risperidone PRN Use – Second Line (sample of orders used in our program)

Risperidone use PRN – SECOND LINE
Risperidone Liquid 0.06 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression; Maximum 2 doses in 24 hours- NOT past midnight
Risperidone Liquid. 0.06 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression. Maximum 3 doses in 24 hours- NOT past midnight
Risperidone Tabs / Liquid 0.125 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 2 doses in 24 hours- NOT past midnight
Risperidone Tabs / Liquid 0.25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 2 doses in 24 hours- NOT past midnight
Risperidone Tabs / Liquid 0.25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 3 doses in 24 hours- NOT past midnight
Risperidone Tabs / Liquid 0.5 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 2 doses in 24 hours- NOT past midnight
Risperidone Tabs / Liquid 0.5 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 3 doses in 24 hours- NOT past midnight

Quetiapine

Quetiapine is available in oral formulation only. It is the preferred antipsychotic for patients with LBD and PD, due to its favourable side effect profile with a lower incidence of extrapyramidal symptoms in low doses. Quetiapine is metabolized primarily in the liver, with inactive metabolites. Common side effects include orthostatic hypotension, drowsiness, constipation, weight gain and dry mouth. [26, 27]

Unfortunately, not many good choices of parenteral antipsychotics are available for a patient with LBD or PDD who is non-compliant with oral medications. A high level of vigilance must be maintained to avoid high potency agents especially haloperidol. In such cases, judicious and cautious use of typical mid-potency antipsychotics (e.g. loxapine) may be considered. Purely for its sedative effect, a short-acting benzodiazepine (e.g. lorazepam), may be considered only for a short duration.

Table 7. Quetiapine Nighttime Use (sample of orders used in our program

○ Quetiapine IR REGULAR 6.25 mg PO at 2000 and 2200 hours. Hold 2200 hours if asleep.
○ Quetiapine IR REGULAR 12.5 mg PO at 2000 and 2200 hours. Hold 2200 hours if asleep.
○ Quetiapine IR REGULAR 25 mg PO at 2000 and 2200 hours. Hold 2200 hours if asleep.
○ Quetiapine IR REGULAR 50 mg PO at 2000 and 2200 hours. Hold 2200 hours if asleep.
○ Quetiapine IR REGULAR 100 mg PO at 2000 and 2200 hours. Hold 2200 hours if asleep.

Table 8. Quetiapine Daytime Use (sample of orders used in our program)

☐ Quetiapine IR REGULAR 6.25 mg PO at 0800, 1200, 1600 hours. Hold if drowsy or unsteady
☐ Quetiapine IR REGULAR 12.5 mg PO at 0800, 1200, 1600 hours. Hold if drowsy or unsteady
☐ Quetiapine IR REGULAR 25 mg PO at 0800, 1200, 1600 hours. Hold if drowsy or unsteady
☐ Quetiapine IR REGULAR 50 mg PO at 0800, 1200, 1600 hours. Hold if drowsy or unsteady
☐ Quetiapine IR REGULAR 100 mg PO at 0800, 1200, 1600 hours. Hold if drowsy or unsteady

Table 9. Quetiapine PRN Use – Second Line (sample of orders used in our program)

Quetiapine IR 6.25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression; Maximum 2 doses in 24 hours- NOT past midnight
Quetiapine IR 6.25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression. Maximum 3 doses in 24 hours- NOT past midnight
Quetiapine IR 12.5 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 2 doses in 24 hours- NOT past midnight
Quetiapine IR 12.5 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 3 doses in 24 hours- NOT past midnight
Quetiapine IR 25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 2 doses in 24 hours- NOT past midnight
Quetiapine IR 25 mg. PRN Use Second Line. PO Every 6 hours for SEVERE agitation / aggression Maximum 3 doses in 24 hours- NOT past midnight

Clozapine

Clozapine has stronger evidence for use in PD but is not used commonly due to poor tolerance with many side effects (e.g. agranulocytosis, anticholinergic and diabetes mellitus). Its use would require psychiatry consultation and management.[28]

Loxapine

Loxapine is a mid-potency typical antipsychotic and has a half-life of 4 hours for oral preparation and 12 hours for intramuscular preparation. Loxapine is useful in low doses given for a short duration and can be given intramuscularly but not intravenously. Used carefully, it may cause less extrapyramidal side effects and is more sedating than haloperidol, both potential advantages in a patient with agitation. Loxapine may be preferred over haloperidol for parenteral use for patients with LBD or PD. However, it can also cause more hypotension due to greater alpha-1 receptor blockade and more anticholinergic side effects than haloperidol.

Table 10. Loxapine for Intramuscular Route – PRN and STAT Use – **Third Line: Last Resort Only** (sample of orders used in our program)

Loxapine 6.25 mg intramuscular (IM) PRN - Maximum of 1 dose in 24 hours only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 6.25 mg intramuscular (IM) PRN - Every 6 hours - Maximum of 2 doses in 24 hours only for severe aggression or psychosis as LAST RESORT
Loxapine 12.5 mg intramuscular (IM) PRN - Maximum of 1 dose in 24 hours only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 12.5 mg intramuscular (IM) PRN - Every 6 hours -Maximum of 2 doses in 24 hours only for severe aggression or psychosis as LAST RESORT
Loxapine 25 mg intramuscular (IM) PRN - Maximum of 1 dose in 24 hours only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 25 mg intramuscular (IM) PRN - Every 6 hours - Maximum of 2 doses in 24 hours only for severe aggression or psychosis as LAST RESORT C
Loxapine 50 mg intramuscular (IM) PRN - Maximum of 1 dose in 24 hours only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 50 mg intramuscular (IM) PRN - Every 6 hours - Maximum of 2 doses in 24 hours only for severe aggression or psychosis as LAST RESORT C
***
Loxapine 6.25 mg intramuscular (IM) STAT - GIVE NOW- only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 12.5 mg intramuscular (IM) STAT - GIVE NOW- only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 25 mg intramuscular (IM) STAT - GIVE NOW- only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 50 mg intramuscular (IM) STAT - GIVE NOW- only for severe aggression or psychosis as LAST RESORT ONLY
Loxapine 100 mg intramuscular (IM) STAT - GIVE NOW- only for severe aggression or psychosis as LAST RESORT ONLY

Olanzapine

Olanzapine is a second-generation atypical antipsychotic (SGA) and is available in oral tablets, a rapid dissolve tablet, as well as a rapid acting intramuscularly injectable formulation. Olanzapine may be used, generally following a trial of risperidone, as the latter has an official indication in Canada for use in Alzheimer's dementia with psychosis. In a randomized controlled double-blind trial of olanzapine versus haloperidol, both medications decreased agitation with no significant difference between the two drugs with the conclusion that olanzapine was not superior to haloperidol for the treatment of agitation in patients with dementia.[29]
The intramuscular formulation can reduce agitation in approximately 15-30 minutes. Intramuscular olanzapine is another option to using loxapine, especially if one desires the benefits of an SGA over a typical antipsychotic for parenteral use. Monitor for hypotension, urinary retention, worsening of narrow angle closure glaucoma, paralytic ileus, constipation, and gait disturbance.

Duration of Antipsychotic Use

In many cases, delirium will improve or resolve and the symptomatic use of antipsychotic medications may be tapered and stopped in a matter of days. However, some patients with delirium have a prolonged course with ongoing and disturbing target symptoms of psychosis and aggression requiring longer-term administration of antipsychotics under very close supervision. The other circumstance when longer-term antipsychotic therapy may be needed is in patients with underlying premorbid psychiatric conditions or BPSD with aggressive symptoms. These exceptional circumstances, where a greater duration of antipsychotic use is required, expose the patient to a much higher risk of developing long-term side effects such as tardive dyskinesia, metabolic abnormalities, falls and fractures, increased risk of stroke-like events, and higher mortality. Therefore, informed consent, regular monitoring, scrupulous documentation, dose adjustments, and vigilance is required regarding the need for ongoing antipsychotic treatment.

*The above approach is demonstrated below in Figure 3.

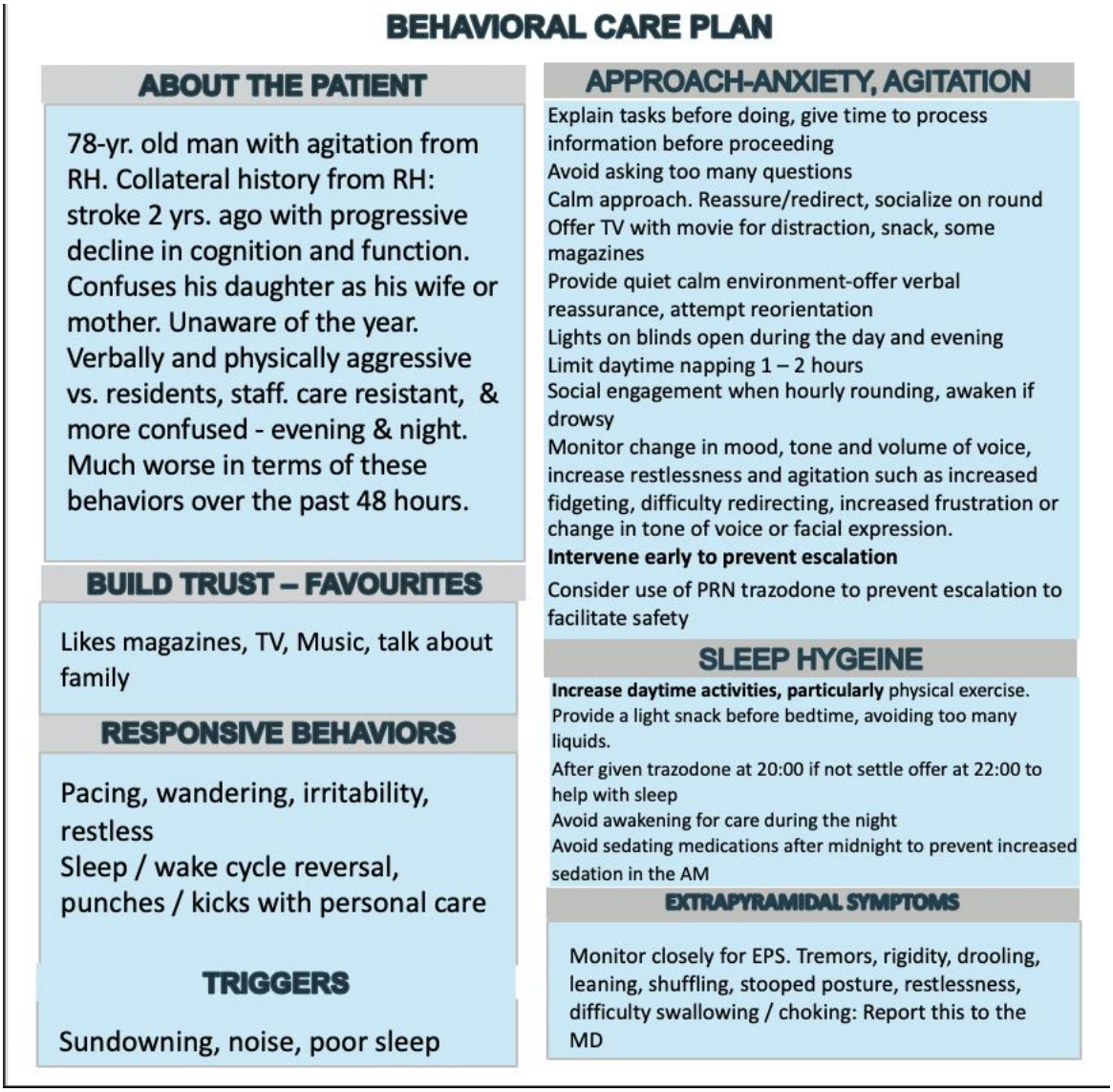
Figure 3: The Ottawa Hospital's (TOH's) Geriatric Psychiatry Behavioural Support Team (GPBST) Pharmacological Approach to Behavioural Management: can be found at the end of the article.

It is important to inquire about the patient's past or current psychiatric condition(s) and treatments as well as a family history of any psychiatric disorders. Delineating behavioural clusters[30] as outlined in the BVS Tool [3] may be very helpful in identifying those agitated and delirious patients who may also have an underlying psychiatric comorbid disorder. If one or more of these clusters is clearly identified, then other psychotropic

treatment combination may be need to be considered including antidepressants, mood stabilizers, novel antipsychotics, and ECT. For more information please click here.

Creating a Comprehensive Plan for Daily Care

In addition to the above, TOH's GPBST develops Behavioural Care Plans for consulting teams to follow in providing day-to-day care of admitted patients. For an admitted, more stable patient than the one previously described, see the case provided below.



BEHAVIORAL CARE PLAN

ABOUT THE PATIENT

78-yr. old man with agitation from RH. Collateral history from RH: stroke 2 yrs. ago with progressive decline in cognition and function. Confuses his daughter as his wife or mother. Unaware of the year. Verbally and physically aggressive vs. residents, staff. care resistant, & more confused - evening & night. Much worse in terms of these behaviors over the past 48 hours.

BUILD TRUST – FAVOURITES

Likes magazines, TV, Music, talk about family

RESPONSIVE BEHAVIORS

Pacing, wandering, irritability, restless
Sleep / wake cycle reversal, punches / kicks with personal care

TRIGGERS

Sundowning, noise, poor sleep

APPROACH-ANXIETY, AGITATION

Explain tasks before doing, give time to process information before proceeding
Avoid asking too many questions
Calm approach. Reassure/redirect, socialize on round
Offer TV with movie for distraction, snack, some magazines
Provide quiet calm environment-offer verbal reassurance, attempt reorientation
Lights on blinds open during the day and evening
Limit daytime napping 1 – 2 hours
Social engagement when hourly rounding, awaken if drowsy
Monitor change in mood, tone and volume of voice, increase restlessness and agitation such as increased fidgeting, difficulty redirecting, increased frustration or change in tone of voice or facial expression.
Intervene early to prevent escalation
Consider use of PRN trazodone to prevent escalation to facilitate safety

SLEEP HYGEINE

Increase daytime activities, particularly physical exercise.
Provide a light snack before bedtime, avoiding too many liquids.
After given trazodone at 20:00 if not settle offer at 22:00 to help with sleep
Avoid awakening for care during the night
Avoid sedating medications after midnight to prevent increased sedation in the AM

EXTRAPYRAMIDAL SYMPTOMS

Monitor closely for EPS. Tremors, rigidity, drooling, leaning, shuffling, stooped posture, restlessness, difficulty swallowing / choking: Report this to the MD

Back to the Emergency Department Case

Mr. JT was not allowing any type of medical investigations or nursing care to be provided to him due to his constant verbal and physical responsive behaviours including kicking, punching, biting, scratching, threatening, and repetitively saying, "Leave me alone…get out of here! You are trying to kill me!" He was clearly psychotic and aggressive likely due to a delirium, possibly with other underlying comorbid conditions. Since the situation compromised the safety of other patients and staff, informed consent was quickly obtained over the phone from his substitute decision-maker to use antipsychotics if necessary, along with

benzodiazepines and trazodone. If the emergency was of extreme urgency, and there was no opportunity to obtain consent, then most clinicians would likely treat first to get control over safety and then obtain consent along with collateral history as per their respective jurisdiction's legislation.

Mr. JT not take any medications by mouth saying it was "poison" despite several efforts by staff using GPA techniques to persuade him. He was physically quite a strong man, weighing approximately 80 kg, and was not frail. He had no overt signs of Parkinsonism and a quick review of his medical history revealed no history of visual hallucinations, all in keeping with him not having LBD or PD. Nevertheless, haloperidol was avoided and he was given loxapine 12.5 mg intramuscularly as a single dose with the help of extra personnel to assist with administering the injection. He was then allowed to rest for a few minutes under constant observation in a safe and quiet area. Within 30 minutes he started to relax enough to allow staff to do vital signs and blood work. As he calmed down, he was able to take oral fluids and therefore a small dose (0.125 mg) of liquid risperidone was administered orally.

After receiving loxapine and risperidone as a single dose, he was much more cooperative with care. However, within a couple of hours, he started to show signs of parkinsonism (i.e. rigidity, tremors, drooling, and cogwheeling). The antipsychotics were immediately stopped, and he was given intravenous fluids while his delirium workup was being conducted. Benztropine was NOT administered due to its severe anticholinergic properties. A creatinine kinase (CK) level was also done to rule out the neuroleptic malignant syndrome. A few hours after the antipsychotics were stopped, his parkinsonism subsided and his CK levels were within normal range. More detailed collateral history revealed that he did in fact have some history of vivid visual hallucinations of animals and people, and features of parkinsonism, which had not been documented in the past. So the caveat here is that not everyone presents with clear symptoms of PD or LBD, and the clinician must always be cautious and keep a high index of suspicion when treating patients with antipsychotics.

Quetiapine is the least offending agent in cases of potential PD or LBD and may be used for symptomatic treatment in very low doses if required. The initial intramuscular single dose of loxapine was a reasonable choice as a mid-potency agent, but haloperidol and risperidone must be totally avoided. Oral trazodone would also be first-line for mild to moderate agitation, but it does not usually relieve symptoms of psychosis or severe aggression, where antipsychotics are required to help create a safe care plan.

Summary and Acknowledgements

The Ottawa Hospital's Geriatric Psychiatry Behavioural Support Team has found the above strategies very helpful to manage patients with acute agitation safely and effectively. The patient-centred manner of integrating non-pharmacological and pharmacological treatments is based on reviews of the scant literature, combined with a wealth of clinical experience. The GPBST is a dedicated multi-disciplinary behavioural support team, serving patients across a wide range of clinical programs in the context of a large tertiary acute care hospital. I would like to gratefully acknowledge the following individuals who were highly instrumental in creating the Geriatric Psychiatry Behavioural Support Team at The Ottawa Hospital and with the content of this article.

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5. Ms. Margaret Neil-McKenzie
6. Ms. Dianne Rossy
7. Ms. Nadine Sebahana
8. Ms. Laura Wilding

Figure 1. Non-pharmacological Strategies

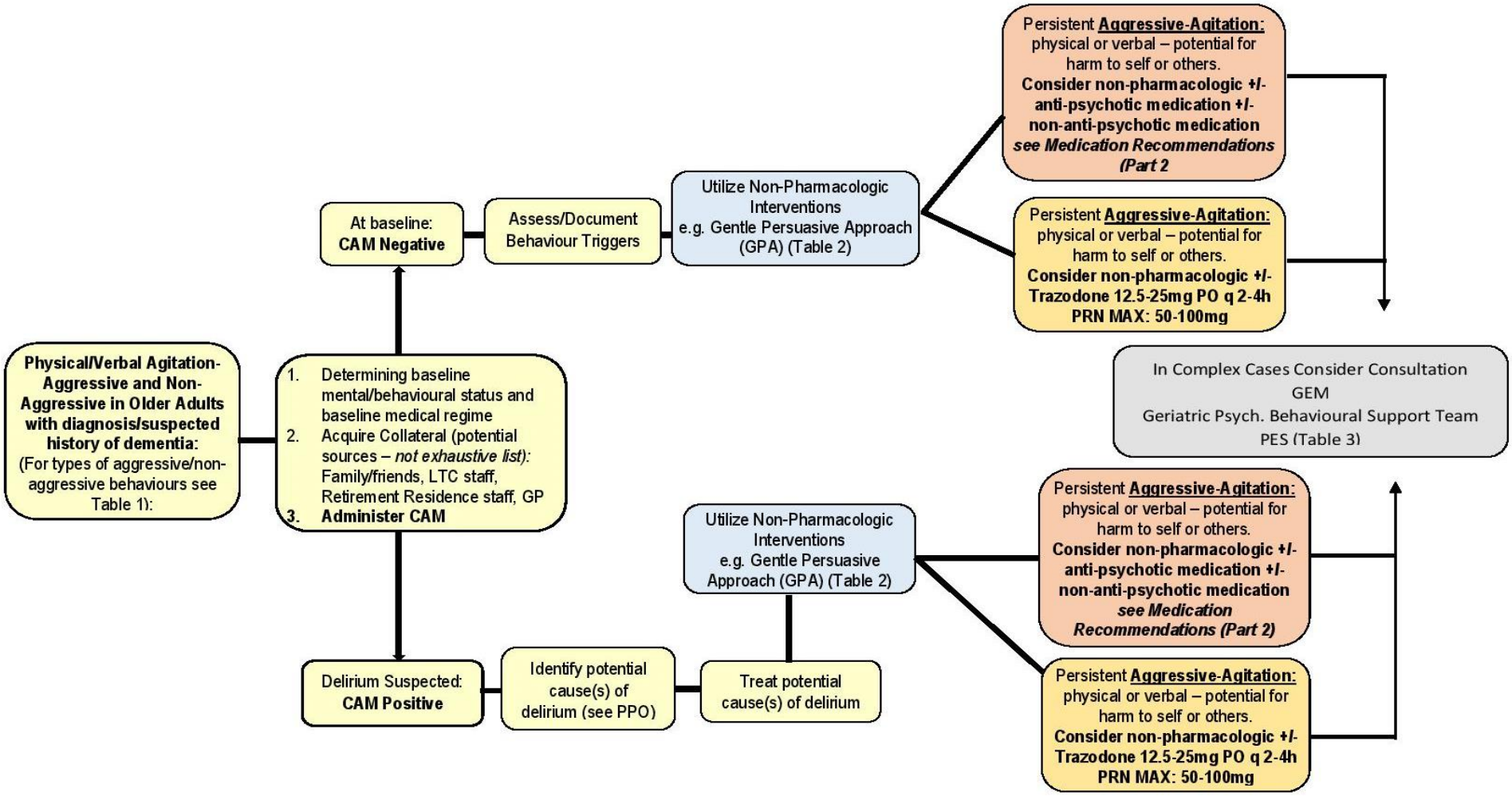
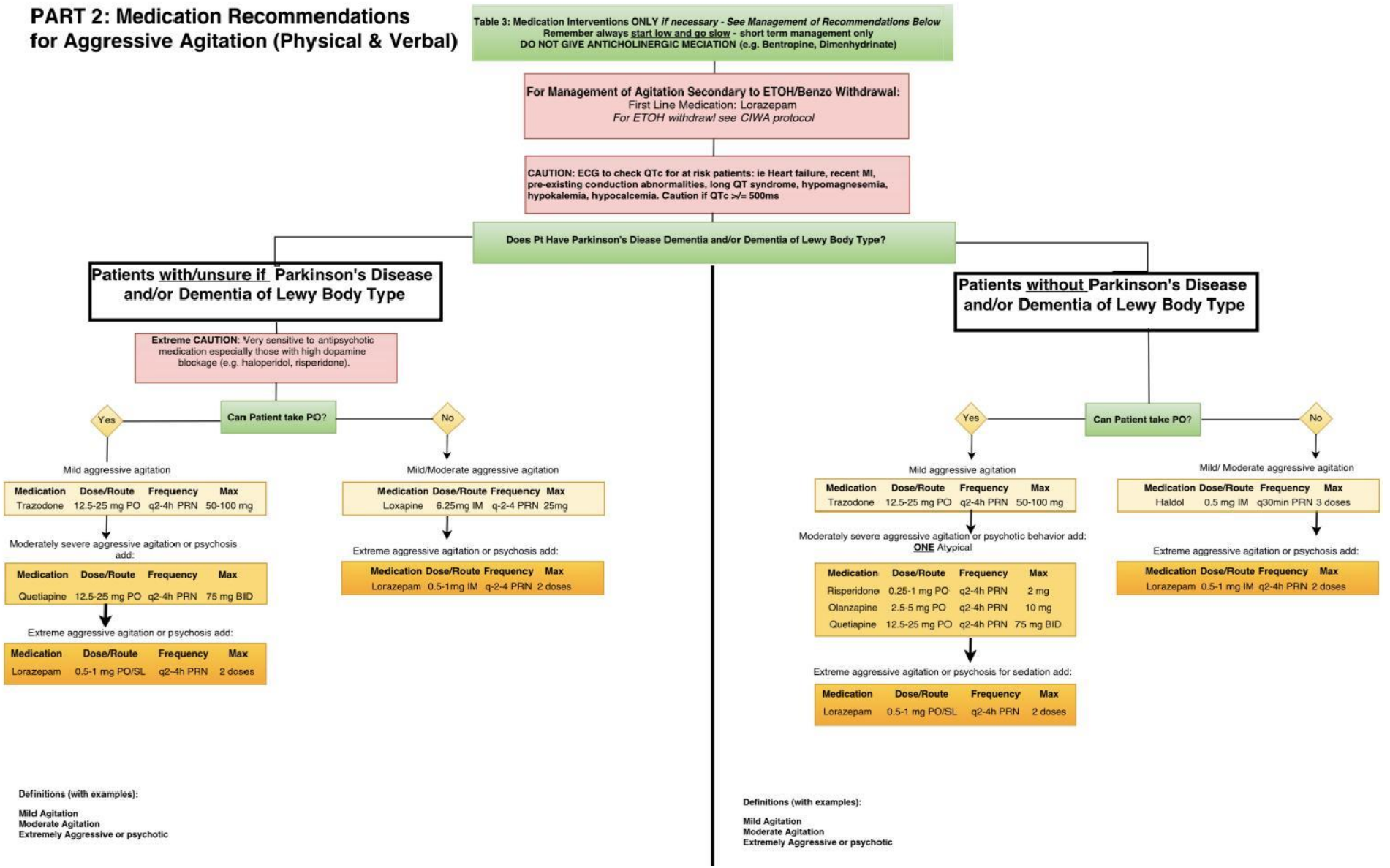


Figure 3. The Ottawa Hospital's (TOH's) Geriatric Psychiatry Behavioural Support Team (GPBST) Pharmacological Approach to Behavioural Management.



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