VTC | Virginia Tech Carilion

MANAGING BEHAVIORAL COMPLICATIONS OF DEMENTIA

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DISCLOSURES

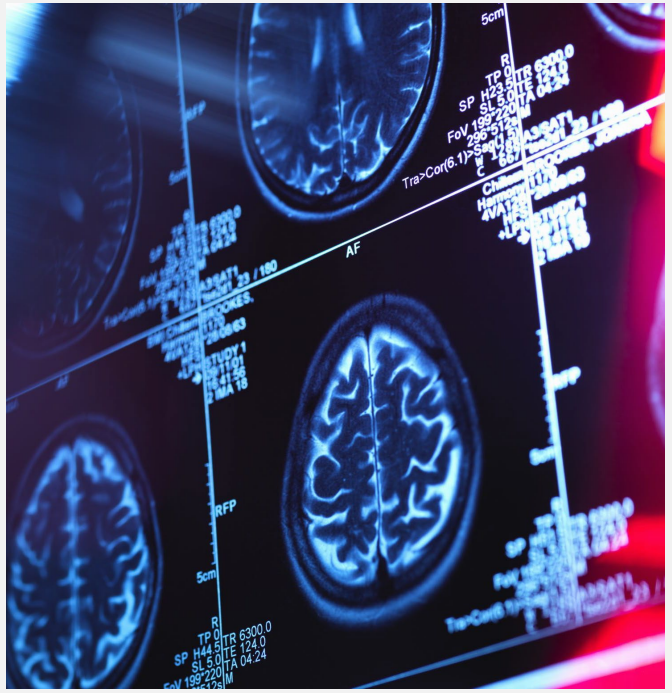
- No financial interests
- Special thanks to Dr. Christi Stewart

OBJECTIVES

1. Review behavioral and psychological symptoms of dementia (BPSD)
2. Explore currently accepted non-pharmacologic and pharmacologic management of BPSD
3. Discuss off-label, emerging, and theorized ways to improve BPSD

WHAT ARE BPSD?

- Non-cognitive symptoms of dementia
  - First formally recognized in the 1980s
- Symptoms of disturbed perception, thought content, mood or behavior
  - Also called neuropsychiatric symptoms of dementia
- Often distressing
  - Patient
  - Caregivers
  - Family members



BPSD SPECTRUM

Behavioral	Psychological
Physical aggression Screaming Restlessness Agitation Wandering Sun-downing Culturally inappropriate behaviors Sexual disinhibition Hoarding Repetitive vocalization Cursing Shadowing	Anxiety Depressive mood Hallucinations Delusions Sleep disturbances Apathy

HOW COMMON?

- As the population ages, the incidence of dementia and related diagnoses is escalating…rapidly
- Present in varying degrees in 60-90% of persons diagnosed with dementia
  - 34% of patients with dementia experience hallucinations
  - Some reports indicate 97% prevalence

Cerejeira J, Lagarto L, Mukaetova-Ladinska EB. Behavioral and psychological symptoms of dementia. Front Neurol. 2012 May 7;3:73.

WHEN DOES IT OCCUR?

- Can occur at any stage in the dementia disease process
  - Affective symptoms more likely to occur earlier in the disease
  - BPSD become much less evident in the end stages of the disease
- Wandering and agitation are the symptoms (in general) with the longest duration

VARIATION OF BPSD BASED ON DIAGNOSIS

- Question if there is a difference in BPSD displayed in specific dementia diagnoses
  - >70 conditions cause dementia, so can be difficult to categorize

Kales HC, Gitlin LN, Lyketsos CG. Assessment and management of behavioral and psychological symptoms of dementia. BMJ. 2015 Mar 2;350:h369.

BPSD BY DIAGNOSIS

Alzheimer's dementia	• Higher rate of delusions – theft, abandonment, house is not their home, imposters (Capgras syndrome), infidelity
Vascular dementia	• Higher rates of depression and anxiety
Lewy Body Dementia	• Higher rate of visual hallucinations • 80% of LBD patients v 20% of AD patients
Frontotemporal Dementia	• Characterized by impulsivity, hypersexuality, verbal outbursts, wandering, apathy
Huntington's Dementia and Creutzfeldt-Jakob Dementia	• More abrupt and disruptive behaviors earlier in disease process

BIOCHEMICAL CORRELATION?

Serotonin	Dopamine	Norepinephrine	GABA	Cholinergic
Anxiety Depression Obsessive behaviors Suicidal ideations	Delusions Paranoia Visual hallucinations Physical aggression Verbal aggression Care refusal Wandering	Depression Apathy Care refusal	Anxiety Exit-seeking Appetite changes Increased pain sensitivity	Confusion Memory impairment Poor judgement Wandering Disrobing Delirium

DIFFERING FEATURES OF THE "THREE D'S"

Feature	Delirium	Dementia	Depression
Onset	Usually sudden	Chronic and insidious	Abrupt and coinciding with life changes
Duration	Hours to <1 month	Months to years	Months to years
Progression	Abrupt	Slow	Variable and uneven
Memory	Impaired and sudden	Impaired	Selective or patchy
Thinking	Disorganized, slow, incoherent	Scarcity of thought, poor judgement, aphasia	Intact with themes of hopelessness
Sleep	Disturbed	Disturbed	Early morning awakening
Awareness	Reduced	Variable	Clear
Alertness	Fluctuates between lethargic and hypervigilant	Normal	Normal
Attention	Fluctuates	Normal	Easily distracted

IMPORTANCE

- Often results in suffering
  - Patients and caregivers
- Premature institutionalization
  - Leading cause for placement
- Increased cost of care
  - Increased ED utilization
  - Prolonged hospital stay

Caregiver strain

- Families
- Nursing staff in hospitals and ECFs

- Loss of quality of life
- Excess disability
  - People with BPSD functional at a lower level than those without
- Death – hallucinations lead to increased risk

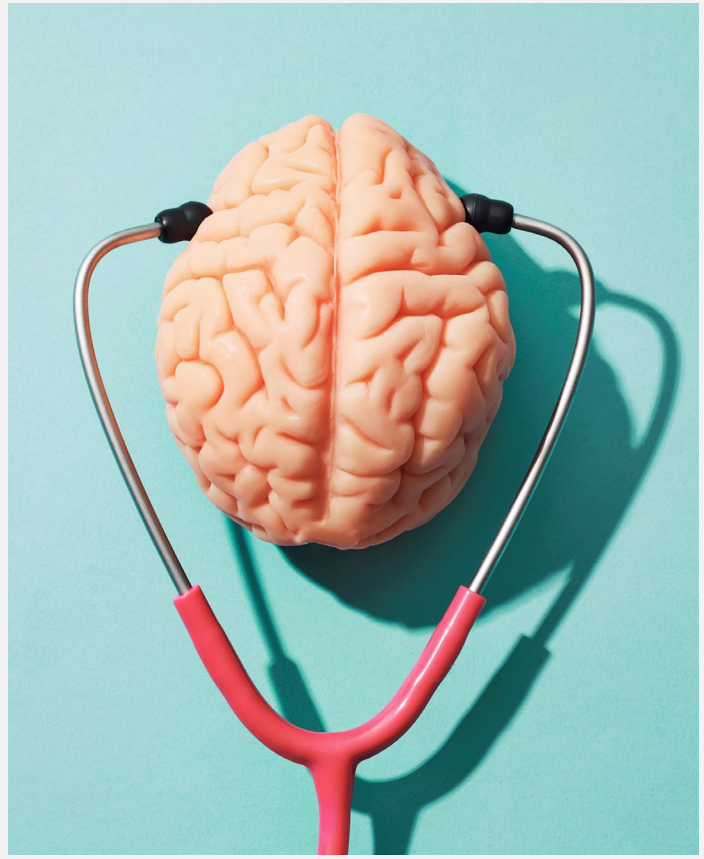
CAREGIVER STRAIN

- Increase risk of depression and anxiety in caregivers
  - Increased use of antidepressants/ anxiolytics in caregivers
- Decreased satisfaction
  - Social networks
  - Medical care… that means you!
- Increased risk of abuse
  - Survey found 33% of caregivers have been abused by people they care for.
  - Same survey found that 11.9% of caregivers caring for those with BPSD engaged in physically abusive behaviors.

Bessey LJ, Walaszek A. Management of Behavioral and Psychological Symptoms of Dementia. Curr Psychiatry Rep. 2019 Jul 1;21(8):66

CONTRIBUTING FACTORS

- Physical health
- Unrecognized v sub-optimally treated pain
- Side effects of medications
  - Constipation
  - Confusion
- Psychosocial factors
- Physical environment
- Depression
- Functional relationship with caregivers



HOW TO RECOGNIZE

- Number of scales developed to measure and improve documentation
  - Neuropsychiatric Inventory
  - Cornell Scale for Depression
  - Geriatric Depression Scale
  - Cohen-Mansfield Agitation Inventory
  - Behavioral Pathology in Alzheimer's Dementia (BEAM-D)
  - BEHAVE-AD

ASSESSMENT

- Cause assessment
  - New infection or medication?
- Medication review
  - Anticholinergics? Benzodiazepines? Alcohol?
- Pain assessment (PAINAD)
- Delirium assessment (CAD)
- Depression assessment (PHQ-9 or GDS)
- Sleep assessment (OSA?)
- Vision/hearing assessment (Charles Bonnet syndrome)

Bessey LJ, Walaszek A. Management of Behavioral and Psychological Symptoms of Dementia. Curr Psychiatry Rep. 2019 Jul 1;21(8):66

"THEY ALWAYS GET LIKE THIS WHEN…"

- Most documented symptom for predicting UTI in nursing home resident is mental status changes (93%)
- CDC reported that UTI treatment was avoidable at least 39% of the time
  - Cost, antimicrobial resistance, side effects of antibiotics, C.diff infections, preventable admissions to hospital
- Asymptomatic bacteria is *prevalent*
  - 6-16% in women >65
  - 20% in women >80
  - 25-50% in women in LTC facilities
  - 10% in men >80
  - 15-35% of men in LTC facilities
  - Increase by 3-10% daily in older adults with catheters
  - Pyuria + bacteriuria: 32-90%

Mody, L. Approach to Infection in the Older Adult. Post TW, ed. UpToDate. Waltham, MA: UpToDate Inc. http://www.uptodate.com. (Accessed on March 23, 2023)

"THEY ALWAYS GET LIKE THIS WHEN…"

- Behavior changes alone have a poor positive predictive value for UTIs
  - Presence of other signs: Fever (100.4°), hematuria, pain
- Presence of mental status changes + bacteriuria and pyuria without clinical instability can be observed for 24-48 hours without antibiotics
- Rule out other sources of infection, hypoxia, medication changes
- Push fluids!

Schulz L, Hoffman RJ, Pothof J, Fox B. Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections. J Emerg Med. 2016 Jul;51(1):25-30.

APPROACH TO MANAGEMENT

Describe

Investigate

Create

Evaluate

APPROACH TO MANAGEMENT

Describe

Target problem

Specific symptoms need to be defined

Journal/Document

Investigate

Why is the target behavior occurring?

Preceding and subsequent circumstances?

Course of behavior?

Create

Formulate and implement a behavior plan

Evaluate

Modify the consequences to improve the behavioral disturbances

Kales HC, Gitlin LN, Lyketsos CG; Detroit Expert Panel on Assessment and Management of Neuropsychiatric Symptoms of Dementia. Management of neuropsychiatric symptoms of dementia in clinical settings: recommendations from a multidisciplinary expert panel. J Am Geriatr Soc. 2014 Apr;62(4):762-9.

APPROACH TO MANAGEMENT

- Assess risk of harm and ensure safety
- Describe target behaviors clearly
- Try non-pharmacological strategies first
- Discuss options with patient/family
- Reassess after any intervention
- Modify treatment as indicated

NON-PHARMACOLOGIC TREATMENT MODELS

Unmet Needs Model

- Caregiver may not be aware or unable to fulfill the needs of the patient
- Determine whether unmet needs can be anticipated and alleviated

Behavioral Learning Model

- Aberrant behaviors are learned and maintained through reinforcement
- Caregiver training and support – essential for success!

Environmental Vulnerability Model

- Those with dementia are subject to greater stress from environmental stimuli
- Identify and avoid environmental triggers
- Identify preceding events

ACTIVITY BASED INTERVENTIONS

- Based on sensory, psychological, behavioral and environmental input
  - Cooking, gardening, music, exercise, story-telling, Montessori activities
  - Significant reduction in aggression in 8/10 studies
- Group activities adjusted to personality style showed greater success
  - Individualized groups based on functional level and personality style of interest
  - Increased engagement, alertness, attention
- Exercise training (30 min/day) + caregiver education

1. MöhlerR, RenomA, RenomH, MeyerG. Personally tailored activities for improving psychosocial outcomes for people with dementia in community settings. *Cochrane Database of Systematic Reviews* 2020, Issue 8. Art. No.: CD010515.
2. Teri L, et al. Exercise plus behavioral management in patients with Alzheimer disease: a randomized controlled trial. *JAMA*. 2003;290(15):2015.

WANDERING INTERVENTIONS

- Location technology
  - GPS
  - Bluetooth
- Alarms and motion sensors
- Walking groups
- Distraction/redirection
  - Mirrors in front of exit doors
  - Door murals
- Identification cards
- Safe Return Program

N.A. Neubauer et al. / Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring 10 (2018) 615-628

NON-PHARMACOLOGIC - SENSORY

Aromatherapy

- Lavender or lemon balm via skin application or inhalation
- Safe, well tolerated, inexpensive
- Limited and varying efficacy across trials

Music therapy

- Safe, well tolerated, inexpensive
- Limited and varying efficacy across trials
  - Group music with movement intervention showed decreased agitation in some studies
  - Reduction in anxiety

1. Ball EL, Owen-Booth B, Gray A, Shenkin SD, Hewitt J, McCleery J. Aromatherapy for dementia. Cochrane Database Syst Rev. 2020 Aug 19;8(8):CD003150.
2. Moreno-Morales C, Calero R, Moreno-Morales P, Pintado C. Music Therapy in the Treatment of Dementia: A Systematic Review and Meta-Analysis. Front Med (Lausanne). 2020 May 19;7:160.

NON-PHARMACOLOGIC - SENSORY

- Sensory interventions: acupressure, massage, Snoezelen
  - Some short-term improvement, but not consistent

Watt JA, Goodarzi Z, Veroniki AA, Nincic V, Khan PA, Ghassemi M, Thompson Y, Tricco AC, Straus SE. Comparative Efficacy of Interventions for Aggressive and Agitated Behaviors in Dementia: A Systematic Review and Network Meta-analysis. Ann Intern Med. 2019 Nov 5;171(9):633-642.

NON-PHARMACOLOGIC – SPECIAL CARE UNIT

- Associated with decreased use of physical restraints
- Improved behavior at 6 and 12 months of study
- Improved depression scores at 3 months
- Increased number of psychotropic drugs used at 6 months
- Caregiver training is key

Lai CKY, Yeung JHM, Mok V, Chi I. Special care units for dementia individuals with behavioural problems. Cochrane Database of Systematic Reviews 2009, Issue 4. Art. No.: CD006470.

CAREGIVER TRAINING EFFICACY

- Duration: 3 weeks to 6 months
  - Most programs: 2-3 months
- Cost?
- Availability?
  - Community
  - Professional
- Weak empirical evidence

Table 2. Behavior-Related Outcomes Tracked by Family Caregiver Training Programs

Intervention	Frequency/ Severity of Behaviors	Caregiver Distress/Upset with Behaviors	Caregiver Skill/Self-Efficacy in Managing Behaviors
Caregiver Skill Building (CSB)		◆	◆
Coping with Caregiving (CWC)		◆	
Dialectical Behavior Therapy Skills		◆	◆
Home-based training (Huang)	◆		◆
MESSAGE and RECAPS	◆	◆	◆
NYUCI	◆	◆	
Progressively Lowered Stress Threshold (PLST)	◆		◆
Reducing Dementia in Alzheimer's Disease (RDAD)	◆	◆	
REACH II	◆	◆	
REACH VA	◆		
Resourcefulness training	◆		◆
Savvy Caregiver		◆	◆
Savvy Caregiver 2		◆	◆
Skills2Care™	◆	◆	◆
STAR-C	◆	◆	◆
Stress-Busting Program		◆	
Tailored Activity Program (TAP)	◆	◆	◆
Creative Caregiver Training Modules		◆	
Home-based Music Therapy Strategies		◆	
Music and Memory iPod Project	◆	◆	◆
Individualized Music	◆		

1. Cerne Felstead, Luke Perkins, Josh Stott, Esther K. Hui & Aimee Spector (2022) A systematic literature review of group-based training interventions for informal carers: impact on the behavioural and psychological symptoms of dementia (BPSD), Aging & Mental Health, DOI: 10.1080/13607863.2022.2141193
2. https://pblob1storage.blob.core.windows.net/public/nadrc/docs/Behavioral_Training_Paper_FINAL%20Oct%202015.pdf

CASE

- 80F on hospice with mixed Alzheimer's & vascular dementia. Over the course of a few months, she has increasingly exhibited wandering behavior with multiple falls in addition to frequent night awakenings with agitation. Patient was initially started on 2.5mg Zyprexa each evening.

PHARMACOLOGIC MANAGEMENT

- General Principles
  - Know the risks
  - Have realistic goals
  - Communicate the risk/benefit profile
  - Document
  - Follow up *closely*

PHARMACOLOGIC CLASSES FOR BPSD

Anticonvulsants

Antipsychotics

Antidepressants

Stimulants

Analgesics

Memantine

Cholinesterase inhibitors

* Other

ANTIPSYCHOTICS - ADVISORY

- PHA from the FDA
- Essentially every academic society
- Choosing Wisely Campaign
- JAMA Clinical Guidelines

Choosing Wisely®
An initiative of the ABIM Foundation

JAMA Clinical Guidelines Synopsis

WHEN SHOULD I USE AN ANTIPSYCHOTIC THEN?

- Choosing Wisely:
  - **Consider antipsychotic drugs if:**
    - **Other steps have failed**
    - **The person is severely distressed**
    - **The person could hurt themselves or others**
- JAMA
  - **Outside of imminent threat of harm to self or others, antipsychotic medications should be used for BPSD when symptoms are *severe, dangerous, or cause significant distress to the patient*. (B rec)**

ANTIPSYCHOTICS – TRUE RISK OF HARM

- Metabolic disorders – weight gain, increased risk of diabetes, metabolic syndrome
- Anticholinergic effects
- Falls
- Movement disorder (EPS, dystonia, parkinsonism, etc)
- **Increased risk of mortality**

SELECT COMMONLY USED ANTIPSYCHOTICS

- Aripiprazole (Abilify) – good choice for overall BPSD
- Risperidone (Risperdal) – most effective for aggression
- Quetiapine (Seroquel) – least side effects, but least effective for BPSD
- Olanzapine (Zyprexa) – most dopaminergic of all atypical antipsychotics
- Haloperidol (Haldol)

CASE CONT.

- Patient did not respond to low dose Zyprexa
- Zyprexa dose gradually escalated over a couple months w/ variable improvement
- Patient admitted to a local nursing facility for 5 day respite
- Patient receiving 10mg bid of Zyprexa w/ additional Haldol prn at this point
- Evaluate patient at bedside for F2F recertification
- Unresponsive, fetal position, flushed diffusely, not sweating, normal reflexes, no muscle rigidity….Temp consistently recording ~ 108F w/ multiple infrared thermometers… cooling measures initiated… eventually got a rectal thermometer (104F)
- What happened?

HYPERTHERMIC TOXIDROMES by Nick Mark MD

ONE onepagericu.com @nickmmark Link to the most current version →

OVERVIEW:

- Five toxidromes may present with overlapping features: ***hyperthermia***, ***rhabdomyolysis***, ***altered mental status/seizures***.
- Careful history & physical exam can help to differentiate, enabling prompt & correct treatment.
- These are clinical diagnoses (lab tests are not diagnostic)

GENERAL APPROACH TO TREATMENT:

- **Identify/Stop the causative medications**
- **Labs:** CK, U/A, BMP, LFTs, CBC, coags, BG, ECG (✓ QRS), VBG, toxicology testing (APAP, salicylates, etc to r/o co-ingestions)
- **ABCs:** intubation often necessary, ensure adequate MV
- **Cooling:** icepacks, cooling blankets, (antipyretics ineffective)
- **Agitation/Seizures:** BZDs (lorazepam)
- **IVF:** restore euvolemia, & prevent AKI from rhabdo
- **Blood Pressure control**: labetolol, dexmetomidine
- **GI decontamination:** depending timing of ingestion, & only with a secure airway
- Specific antidotes less important than general treatment
- **Poison center consultation** recommended

	SYMPATHOMIMETIC	ANTICHOLINERGIC	SEROTONIN SYNDROME	NEUROLEPTIC MALIGNANT	MALIGNANT HYPERTHERMIA
Mechanism	Excess release of monoamines (epi, NE, DA, 5HT) leadoing to overstimulation of adrenergic receptors.	Blockade of muscarinic Ach receptors impairs acetylcholine signaling in the CNS, on cardiac & smooth muscle, and on sweat glands.	Excessive release of 5H5, usually due to combination of 2 or more serotoninergic meds. Rarely it can occur with a single seratoninergic agent.	Ideosyncratic reaction to dopamine blockers (e.g. anti-psychotic) or due to abrupt cessation of dopamine agonists (e.g. Parkinson's Tx)	Rare ***pharmacogenetic*** disease caused by genetic susceptibility (AD mutations in ryanodine receptor) & triggered by inhaled anesthetics
Potential causes	**Illicits**: Methamphetamine, amphetamine, cocaine, MDMA,, "Designer": cathinones (bath salts), phenethylamines (NBOMe, Gravel), piperadines, tryptamines (DMT, "foxy-methoxy") **Rx Meds**: Methylphenidate, Theophylline *Toxicity may occur suddenly in body packers with ruptured pack.*	**Anti-histamines** (diphenhydramine) **sleep aids** (doxylamine), **TCAs**, **Parkinson's meds**, **Anti-spasmodics** (atropine, scopolamine), **skeletal muscle relaxants**, **Plants** (Jimson Weed, Nightshade) *Eye drops **can** cause systemic toxicity, esp in children/elderly*	**Antidepressants**: SSRIs, MAOIs, SNRI, nefazodone, trazadone **Stimulants**: cocaine, MDMA, methamphethamine, Triptans **Opioids**: fentanyl, tramadol, meperidine **Herbs** (St John's wort, nutmeg, ginseng) **Others** (lithium, valproate, ritonavir dextromethorphan, ***linezolid***, ondansetron, metoclopramide)	Most common with high potency **typical antipsychotics** (haloperidol,) but may also occur with **atypicals** (clozapine, olanzapine, risperidone, quetiapine) and other classes. **Anti-emetics** (metaclopramide, prochlorperazine, droperidol) **Withdrawal of chronic DA agonist** (levodopa/carbodopa, bromocriptine)	**Inhaled anesthesia agents** (all inhaled agents except NO) or **Depolarizing neuromuscular blockers (succinylcholine)** *Can occur after the first exposure to general anesthesia, however typically occurs after 3+ exposures to volatiles. Sux may be more likely to trigger MH on the 1st exposure*
Time from exposure	< 12 hrs	< 12 hrs	< 12 hrs	Usually 1-3 days after starting new med or after dose change	30 min to 24 hrs
Temp	↑ >38	↑ >38	↑ T >38	↑↑ T39-42	↑↑↑ Often T>42
Pupils	Normal	**DILATED** and **NON-REACTIVE**	**DILATED**	Normal	Normal
Muscle tone	normal	normal	May have **increased tone**, *particularly in lower extremities*	**RIGIDITY** present "lead pipe" RIGIDITY	**Extreme RIGIDITY** present "rigor mortis like" rigidity
Reflexes	normal	normal	**HYPERreflexia** of DTRs **CLONUS** present	**BRADYreflexia**	**HYPOreflexia**
Skin	sweaty	**RED, DRY, HOT**	sweaty	sweaty	sweaty
Urine	normal	**URINARY RETENTION**	normal	normal	normal
Bowel tones	normal	**ABSENT**	**HYPERACTIVE**	normal	normal
Other findings & diagnostic criteria	Extreme **HYPERTENSION**	May cause Lilliputian hallucinations Mneumonic: "Red as a beet, dry as a bone, hot as a hare, blind as bat, mad as a hatter"	Slow continuous horizontal eye movements (**OCULAR CLONUS**) Diagnosis is based on either **Hunter Criteria** (Se84% Sp97%) or presence of **Sternback criteria** (Se75 Sp96%)	Altered mental status can include **CATATONIA**, which may persist.	**HYPERCARBIA** may be first sign Rapid increase in core Temp (often 1°C increase / 10 minutes) & Muscle rigidity persists despite receiving NMB
Specific treatment	Laparotomy may be lifesaving for body packers with rupture. Use non-selective beta blockers (**labetolol**) to avoid "unopposed α stimulation. Theophylline is dialyzable	In severe cases consider slowly giving **Physostigmine** (risky as it can cause cholinergic toxicity; discuss risks/benefits with poison center) If wide QRS → bicarbonate	Consider **Cyproheptadine** as an adjunct in severe cases, however no evidence that **cyproheptadine** improves symptoms or outcomes	**Restart DA agonist if it was held** **DA agonists** (bromocriptine, amantadine) may also be useful In severe cases consider **dantrolene**	**Call for help & give Dantrolene** **Aggressive cooling, Match high MV needs** Education to patient about risk of recurrence (and testing for family)

NUEDEXTA

- Dextromethorphan and quinidine 20mg/10mg bid
  - Start qday, and increase to bid after 7 days
  - No dose adjustment for renal impairment
- Approved for treatment of **pseudobulbar affect**
- May provide some benefit for severe agitation in patients with dementia
  - Single trial of 220 patients with likely DAT
  - >90% were outpatients taking 1+ anti-dementia drug, antidepressant or antipsychotic.
  - Average of 2.5 point reduction in NPI, but uncertain clinical significance.
- Question if **cost** of medication is worthy of possible benefits
  - $907 for 60 pills

Cummings JL, et al. Effect of Dextromethorphan-Quinidine on Agitation in Patients With Alzheimer Disease Dementia: A Randomized Clinical Trial. JAMA. 2015 Sep 22-29;314(12):1242-54.

PIMAVANSERIN (NUPLAZID)

- Atypical antipsychotic with FDA approval (2016) for treatment of hallucinations and delusions related to Parkinson's disease psychosis.
- Selective serotonin inverse agonist preferentially targeting 5-HT2A receptors.
  - No dopamine receptor activity (unlike other atypical antipsychotics).
- Not approved for treatment of behaviors related to dementia and continues to carry the black box warning.
  - Of those in study, >95% had MMSE scores >21
- Dose: 34mg/day (2 x 17mg tablets)
  - Not recommended for CrCl <30.
  - 17mg (60): $2559.96
  - Time to peak: 6 hours
  - Half life elimination: 57 hours
- Side effects: Prolonged QT intervals, peripheral edema, nausea, confusion, hallucinations, constipation, gait disorders

PAIN MANAGEMENT

- Pain is prevalent
  - 50-60% of community dwelling older adults
  - 75-90% of nursing home residents
- 18-week study randomizing nursing home residents to pain management intervention v usual care
  - Acetaminophen, morphine, buprenorphine transdermal patch, pregabalin
  - Those in pain management group had reductions in agitation, pain and aggression
  - No differences in ADLs or cognition

DEMENTIA MEDICATIONS

- Donepezil (Aricept) ineffective for treatment of agitation
- Effects in Lewy Body Dementia are greater than in Alzheimer's dementia
  - Rivastigmine (Exelon) in patients with DLB showed improved cognition and reduction in hallucinations.
- Memantine (Namenda)
  - 2 RCTs for community-dwelling patients showing 0.1 point improvement in NPI v 3.7 point decline in NPI
  - Alzheimers only, not seen in Parkinsons, FT, Lewy body

ANTIDEPRESSANTS

- Only studies are on sertraline and citalopram
  - Sertraline 200mg better than placebo in 1 trial of 244 patients
    - Significant improvement in agitation based on Cohen-Mansfield Inventory
  - Citalopram showed benefit in 1 trial of 52 patients
    - Improvement in Neuropsychiatric Inventory scores
- No evidence to recommend trazodone for BPSD
  - 2 trials involving 104 patients
- No evidence for mirtazapine
  - May increase mortality?

ANTICONVULSANTS

- Valproate
  - Not FDA approved
  - Not associated with reduced agitation in patients with dementia
    - Cochrane review, but no high-quality trials.
  - High dose associated with significant increase in adverse events
    - Sedation, nausea, vomiting, diarrhea, GI upset, infections, thrombocytopenia
- Carbamazepine
  - Not enough evidence to recommend routine use
- Lamotrigine
  - No placebo-controlled trials
- Gabapentin
  - Reported to reduce behavioral symptoms
    - Study contained 20 patients with Alzheimer's disease.

STIMULANTS

- Methylphenidate (Ritalin) effective for negative symptoms
  - Apathy, lack of will, lack of motivation
  - Starting dose of 10-20mg/day
    - Significant improvement in negative symptoms
    - Modest improvement in cognitive scores
    - No change in depressive symptoms

SEXUAL BEHAVIORS - PHARMACOLOGY

- Acetylcholinesterase inhibitors
  - Conflicting evidence – case reports
  - Rivastigmine, donepezil
- SSRIs (trazodone, citalopram), Buspirone (Case reports)
- B- blockers
- Antiandrogen agents in men
  - Estrogens (Estradiol 0.5mg/day patch)
    - Increased risk of MI, VTE, mood changes
  - Anti-androgens:
    - 19,20 medroxyprogesterone acetate (Depo-Provera) 100-600mg/week
    - Increase risk of VTE and osteoporosis
  - Cimetidine 600 – 1600mg/day
    - High doses increase risk of delirium
  - Gonadotropin-releasing hormone analogs
    - Leuprolide (Lupron/Eligard) 3.75mg IM qmonth

PRACTICE RECOMMENDATIONS

- BPSD are common and should be assessed for at each office visit for patients diagnosed with dementia
  - Assess risk of harm and ensure safety
- Describe target behaviors clearly
- Investigate for behavioral cause
- Non-pharmacological management is always recommended first
- Medications should only be trialed if:
  1. Non-pharmacological interventions have been appropriate trialed
  2. Patient is at risk of harm to self or others
- Informed consent should be obtained after discussion of risks with surrogate decision maker
- Treatment plans need to be frequently reassessed
  - Attempts to wean medications every 4-6 months

QUESTIONS

ADDITIONAL SOURCES

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