Management and Clinical Course of PSP / CBD / MSA

Anhar Hassan, MBBCh, FRACP
Assistant Professor of Neurology

CurePSP and Mayo Clinic Family Conference
June 30, 2018

Overview

- Describe the clinical course of PSP, CBD, MSA
- Review management of early and late symptoms

Clinical Course Early

- PSP, CBD and MSA may look very similar, or resemble other conditions
  - e.g. Parkinson's; dementia; speech/language disorder (PSP, CBD); other cerebellar ataxias (MSA)
- This can lead to misdiagnosis or a period of uncertainty before diagnosis
- Early hallmark signs can help diagnosis
  - e.g. Difficulty looking down (PSP); incontinence, faints, REM sleep disorder (MSA); single rigid limb (CBD)
- Tests may be helpful
  - MRI, PET, neuropsychometry, speech, autonomic

Clinical Course

- Progressive
  - Usually faster than Parkinson disease
- Natural history is very variable
  - No two patients exactly alike, difficult to predict course
- Affects quality of life; dependence
- Survival is variable

PSP

- Clinical picture:
  - Richardson's syndrome
  - PSP-parkinsonism
  - Corticobasal syndrome (CBS)
  - Freezing of gait
  - Frontotemporal dementia
- Progression:
  - Imbalance, falls (need walker), vision problems, speech reduced and hard to understand
  - Dependent for self-cares (3-4 years)
- Survival (6-9 years)

CBD

- Clinical picture
  - Corticobasal syndrome (CBS)
  - PSP
  - Frontotemporal dementia
  - Alzheimer-like dementia
  - Aphasia (language disorder)
- Progression
  - Can start in 1 arm or leg (very rigid, fixed posture, apraxia) and spreads to other limbs, gait change, imbalance, falls, speech difficulty, reduced eye movement, cognitive decline, alien limb
- Survival (5-8 years)

MSA

- Clinical picture:
  - MSA, parkinsonian type
  - MSA, cerebellar type
- Disease progression over 1-18 years
  - Blood pressure/bladder problems (2.5 years)
  - Walking aid (3 years)
  - Wheelchair (3.5-5 years)
  - Bedridden (5-8 years)
- Survival (6-8 years, can be >15 years)

Parkinsonism

- Common in PSP, CBD, MSA
- Often occurs early (late in MSA-C)
- =Stiffness (rigidity), slowness (bradykinesia), tremor, imbalance
- Treatment
  - Levodopa is favored medication
    - About 1/3 patients benefit
    - Other Parkinson meds often ineffective
  - PT- stretching program for rigidity

Postural instability / falls

- Common in PSP, CBD, MSA
- Early or late
- Noticed by patient or family. Neurologist often checks "pull test"
- Risk of injuries or fractures, especially if osteoporosis
- Management:
  - PT- balance exercises, falls prevention, gait aid (cane, walker, wheelchair), weighted walkers, nonstick low heel shoes, aerobic exercise
  - Vitamin D and calcium

Freezing of gait

- Can occur in PSP, uncommon in CBD, MSA
- Early or late
- "My feet stick to the floor"
  - Starting walking, turns, doorways
- Treatment:
  - Medications not really helpful (levodopa, amantadine, methylphenidate, rasagiline, pramipexole)
  - PT and OT
  - Walkers with lasers, metronome
  - Visual or rhythmic cues
  - Turn in arc

Myoclonus

- CBD, MSA, CBD
- Early or late
- Brief lightning-like jerky movements of arms / legs / whole body. Can look like tremor, but irregular.
- Management:
  - Often mild, does not require treatment
  - If bothersome, clonazepam (Klonopin) or levetiracetam (Keppra)

Tremor

- MSA, PSP, CBD
- Early or late
- Rhythmic shaking of limb
- Management:
  - Medications provide modest benefit
    - Levodopa, propranolol, primidone, gabapentin, topiramate
  - OT, weighted utensils, anti-tremor spoons

Dystonia

- Very stiff and rigid postures of arm / leg (CBD) or neck (MSA, PSP)
- Early or late
- Management
  - If mild / not bothersome – no treatment needed
  - If bothersome
    - PT stretching program
    - OT arm / leg splinting
    - Botulinum toxin injections
    - Medication (levodopa, baclofen, clonazepam)- stop if ineffective (side effects)

Spasticity

- MSA, CBD, sometimes PSP
- Early or late
- Usually identified by doctor. “Jumpy” reflexes (hyperreflexic) and upgoing toes. Patient may have no symptoms, or report leg/arm stiffness or cramps
- Management:
  - If mild – none
  - PT- stretching program
  - Antispasmodic medications- baclofen
  - Botulinum toxin

Cerebellar ataxia

- MSA-C (also reported in PSP)
- Early
- Management:
  - Mild – no treatment
  - Bothersome or severe – speech therapy for speech; OT, PT, gait aid (cane, walker, wheelchair)
  - No specific medications approved for ataxia

Orthostatic hypotension (lightheaded) + syncope (faints)

- Common in MSA
- PSP often feel lightheaded or dizzy, but blood pressure does not drop on standing
- Can be very bothersome or unsafe (fainting and falls).
- Treatment:
- Fluids (6-8 large glasses water daily), add salt to food
- Compression garments (thigh or waist-high)
- Maneuvers
- Elevate head of bed
- Small meals
- Caffeine or salty drink (V8, gatorade) can boost BP after 15-30 mins for 1 hour
- Medications
  - Midodrine 5-20mg TID (last dose 4 hours before bedtime)
  - Fludrocortisone 0.1mg once or twice daily (before noon)
  - Pyridostigmine 30-60mg QID
  - Droxidopa 100-600mg TID

Bladder / bowel

- Common in MSA (often early), PSP and CBD later
- Urine frequency/urgency (overactive bladder)
  - No treatment if mild
  - Medications- oxybutynin, tolterodine help but side effects; mirabegron less side effects
- Incomplete bladder emptying
  - Intermittent self catheterization

Vision / eye problems

- Common in PSP (also CBD), early or late
- Double vision
  - Prisms
- Eye redness, dryness, light-sensitive (photophobia)
  - Dark glasses
  - Artificial tears, autologous serum tears
- Unable to move eyes up or down (gaze palsy)
  - Mirror prisms
- Eyes blink shut (blepharospasm), unable to open (apraxia of eyelid opening)
  - Botulinum toxin injections
  - Eyelid crutches

Drooling

- Common in MSA and PSP
- Often late
- Management
  - Botulinum toxin injections to parotid glands
  - Nortriptyline/amitriptyline (bedtime dose, also helps sleep and depression)
    - Possible side effects

Stridor

- May occur in MSA
- Early or late
- Harsh breathing noise in upper airway
- If suspected – sleep medicine evaluation (if happens when sleeping) or ENT (if happens when awake).
- Treatment:
  - CPAP/BIPAP machine (night)
  - If severe/life threatening– consider tracheostomy

Speech / language / swallow disorders

- Dysarthria
- Dysphasia/Aphasia
- Dysphagia
- Apraxia of speech

- Covered in Speech lecture

Cognitive impairment / Dementia

- Usually PSP or CBD
- Can be early or late
- Memory usually fine, but other cognitive difficulties
  - "frontal subcortical" – reduced attention + concentration, slowed thinking and retrieval of information, poor organization
  - "parietal"- difficulty with calculation, 3D shapes
- Management:
  - Education patient + caregivers
  - If memory problem – Alzheimer medications (donepezil, rivastigmine, galantamine, memantine)

Alien limb

- CBD, early or late
- "My arm (leg) has a mind of its own". "I can't control it". "It doesn't belong to me"
  - May sit on hand or restrain it to stop it moving.
- Management:
  - Mild, non-bothersome- education
  - Bothersome – OT, PT

Apraxia (arm or leg)

- CBD (rare in PSP, MSA)
- "My hand/arm doesn't work like it used to"
- Normal strength and sensation, but difficulty performing complex skilled movements with the hand
  - e.g. unable to brush teeth, comb hair, use scissors, copy finger signals (e.g. thumbs up, peace sign)
- Management:
  - Explanation
  - OT

Sleep problems

- REM sleep disorder
  - MSA (very rare PSP/CBD)
  - Treatment:
    - Bedroom safety
    - Melatonin 3mg bedtime, increase up to 12-15mg
    - 2nd line- clonazepam 0.25-1mg at bedtime
- Daytime sleepiness
  - Common in all
  - Causes: Often inadequate overnight sleep (too little, poor quality), or switch in day/night pattern.
  - Management:
    - Evaluate by doctor. If bothersome, may need sleep medicine evaluation

Behavioral change

- PSP, CBD (less in MSA)
- Early or late
  - Depression (common)
  - Compulsive behaviors
  - Agitation
  - Irritability
  - Social withdrawal
  - Apathy
- Management:
  - Treat depression- psychology counselling, medication
  - Counselling, strategies to minimize

Caregiver strain

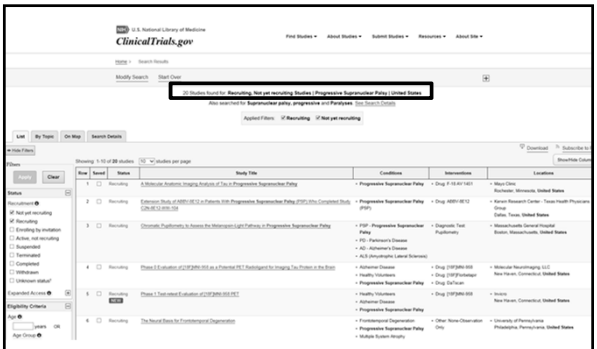
- Common to all
- Early and late
- Spouse/caregiver feels burdened
  - Poor sleep, limited time for self care
  - Can lead to stress, depression, anxiety, burnout, guilt
- Management:
  - Recognize it is ok to feel this way
  - Ask for help
    - Family, social circle
    - Professional resources- foundations, counselling

Palliative care needs

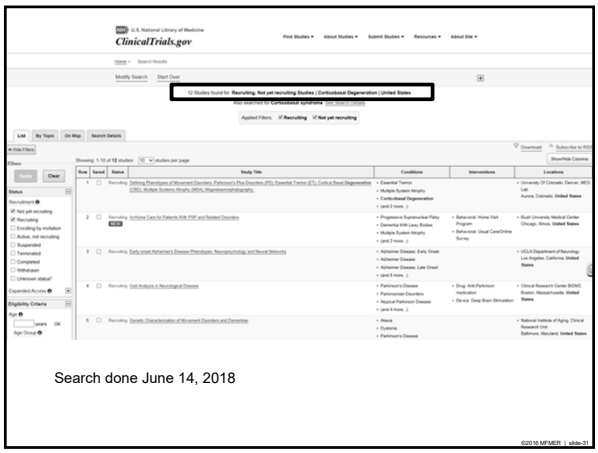
- PSP, CBD, MSA
- Early and late
- Family in distress
  - Respite care, in-home health assistance, hospice, counselling
- Most common complications leading to death
  - Immobility; poor swallow (pneumonia/sepsis)
- Advance care planning early
  - List wishes for goals of care and future treatments (artificial feeding, ICU, resuscitation, place of care, place of death)
  - Will, funeral plans

Specific treatment

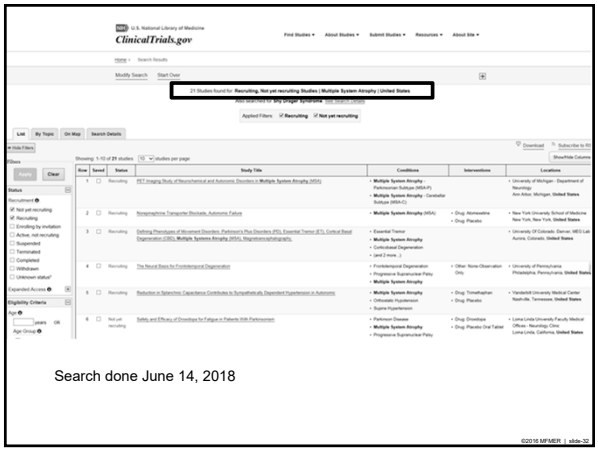
- No current medications to cure, reverse or slow down disease progression
- Experimental
  - Clinicaltrials.gov
    https://clinicaltrials.gov/ct2/results?cond=Progressive+Supranuclear+Palsy&term=&cntry=US&state=&city=&dist=



Search done June 14, 2018



Search done June 14, 2018



Search done June 14, 2018

Resources

- CurePSP (USA) www.psp.org
- The PSP Association (Europe) www.pspassociation.org.uk
- MSA Coalition www.multiplesystematrophy.org
- National Ataxia Foundation www.ataxia.org
- National Parkinson Foundation www.parkinson.org

Questions & Discussion