

AGING IN MS

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- 50 is the new 40
- 80 isn't the new anything

- MS is the most common neurologic disease of young adults worldwide
- Hallmarks: CNS inflammation, demyelination, axonal degeneration and loss, gliosis
- Etiology: combination of genetic susceptibility and environmental factors trigger for disease onset.

- Is there less inflammation, more of a degenerative process as patients age?
- Is someone more likely to have progressive MS diagnosed at a later age?
- How long should we continue therapies?
- Is there an end date?

MS and Mortality

- Danish Registry Studies have shown that MS typically shortens patients' lives by 5-10 years.
- 50% of patients live over 30 years after diagnosis.
- There are approximately 225-350,000 patients older than 65 living with with MS worldwide
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- As patients age, changes associated with aging process can have effect on severity of the disease and overall disability
- Older patients often excluded from drug trials
- Trials often target relapsing patients vs. secondary or primary progressive patients.
- "Aging with Disability" vs. "Disability with Age"

Clinical Manifestations Seen with MS

- Sensory Deficits
- Visual Impairment
- Balance/Coordination Deficits
- Fatigue
- Heat Intolerance
- Pain
- Bowel/Bladder Dysfunction

Clinical Manifestations of Aging

- Fatigue
- Visual Impairment
- Balance/Coordination Deficits
- Fatigue
- Heat Intolerance
- Pain
- Bowel/Bladder Dysfunction

- Decrease in Muscle Mass
- Decreased Cardiopulmonary Reserve
- Impaired Temperature Regulation
- Decreased Renal Clearance
- Greater sensitivity to medication side effects
- Immunosenescence
- Risk/benefit ratio of medication use

- Normal aging and MS share some neuropathological processes:
- Both have demyelination and gray matter atrophy
- Widespread gray matter loss is seen consistently in MS and age related dementia
- Brain Volume loss occurs faster in MS patients than controls(0.5-1% per year vs 0.1-0.3 % in controls)

- Thalamic Volume Loss in MS patients correlated with disability
- Gray matter atrophy- related to cognitive deficits as MS progresses.

MRI Changes in MS vs Aging

- MS lesions usually extend outward from the ventricular surface
- Within the brainstem
- Corpus callosum
- Cerebellum
- Spinal Cord
- Anterior corpus callosum
- Ischemic stroke tends to follow a vascular distribution

MRI in MS vs Aging

Cognitive Functioning

- Approximately 65% of patients with MS experience cognitive loss
- Problems can include:
- Slowed information processing
- Impairments in attention/concentration
- Recent memory
- Executive functioning
- Planning and sequencing

(Deluca, 2006)

- Natural aging could also lead to impaired cognitive functioning
- Medications that can contribute to cognitive slowing include anticholinergics, antispasmodics, opioids, benzo diazepines, Tricyclic antidepressants

Fatigue

- Present in 2/3 of patients
- Malaise, difficulty maintaining concentration
- Aging patient with fatigue
- Need to r/o infection, cancer, anemia, hypothyroidism, rheumatologic disorders, sleep apnea, cardiovascular, pulmonary, renal and hepatic problems
- Depression, pain, physical deconditioning, disrupted sleep and heat can also lead to fatigue

Treatment of Fatigue

- Energy conservation
- Exercise program, yoga
- Medications(amantadine, modafanil, methylphenidate)
- Stimulants need to be used with caution because of risk of cardiac side effects
- Amantadine can cause increase in confusion and edema

Ophthalmological Dysfunction

In MS, optic neuritis, internuclear ophthalmoplegia, nystagmus can affect vision

In aging population:

Cataracts, presbyopia, macular degeneration, glaucoma

Bladder Disturbance

- Anatomic and physiologic changes due to aging can cause urinary frequency, incontinence, hesitancy, retention, nocturia
- Delirium, atrophic vaginitis, enlarged prostate, constipation, endocrine disorders
- Side effects of medications
- Alpha blocking agents can cause orthostasis

Bowel Disturbance

- Constipation can result from:
- Pelvic floor spasticity
- Decreased gastro colic reflex
- Inadequate hydration
- Medication
- Immobility
- Weak abdominal muscles
- Medication side effects

Bowel Disturbance

- Changes in bowel patterns need investigation
- Rule out: colon cancer, diverticular disease, thyroid disease and other medical causes

Sexual Disturbance

- Primary vs Secondary vs Tertiary Sexual Dysfunction.
- Primary: lesions in the CNS that cause decreased genital sensation, decreased orgasmic response
- Secondary: due to other sx such as bowel and bladder problems
- Tertiary: due to psychosocial and cultural issues

Sexual Disturbance in the Elderly

- Impotence
- Orgasmic Dysfunction
- Dyspareunia
- Use Phosphodiesterase 5 inhibitors with caution in the elderly due to possible cardiac side effects

Swallowing Deficits

- In the elderly there can be reduced esophageal motility
- Hiatal hernia
- Achalasia
- Ineffective pharyngeal peristalsis
- These symptoms can exacerbate swallowing difficulties seen with MS.

Heat Sensitivity

- Many MS patients are heat insensitive
- Elderly vulnerable to hyperthermia
- Decrease in sweat gland function
- Loss of subcutaneous fat
- Declining function of the autonomic nervous system

Other age related issues

- Osteoporosis
- Fall Risk
- Osteoarthritis and DJD
- Cardiac Disease
- Diabetes
- Cancer

How Safe are Our Current Disease Modifying Therapies?

- Important of monitoring and providing interventions as patient ages with MS.
- Physical
- Psychological
- Social
- Vocational
- Obtaining Routine Medical Care