PALLIATIVE CARE NEEDS IN MULTIPLE SCLEROSIS AND PRACTICAL PEARLS FOR CLINICAL CARE

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Disclosures

- **All speakers will discuss off-label therapies**

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- Drs. Kim & Ramanathan do not have any relationships with commercial interests

What do you want to know about Palliative / End-of-Life care for persons with Multiple Sclerosis?

Objective

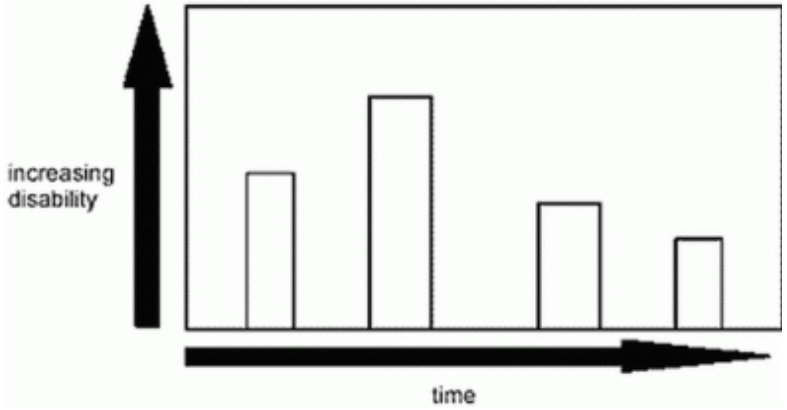
- To discuss current palliative care needs for persons with MS
- To provide clinical and practical tips for the management of MS symptoms in adults*, focusing on MS-specific palliative / EOL issues**

Outline

- Review Multiple Sclerosis (MS) clinical trajectories and heterogeneity of presentations
- Understand how the changing therapeutic landscape in MS affects prognostication and symptom management
- Highlight new data on current patterns of receipt of palliative care
- Discuss future directions for research to address gaps in EOLC care
- Review common symptoms and their management
- Discuss grief in context of MS

Multiple Sclerosis: Disease Overview

Relapsing Remitting MS



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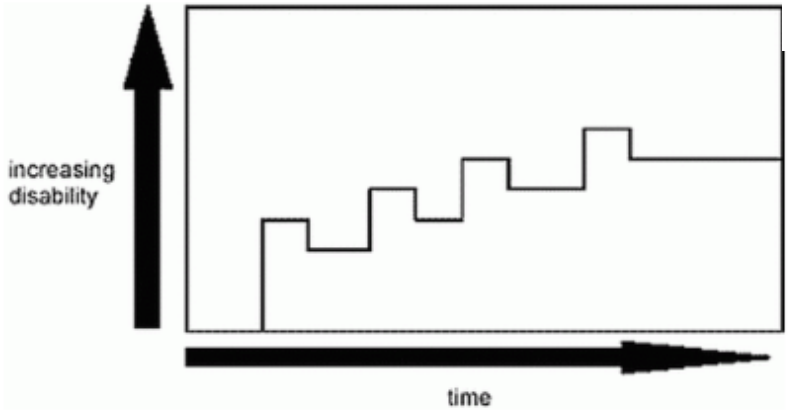
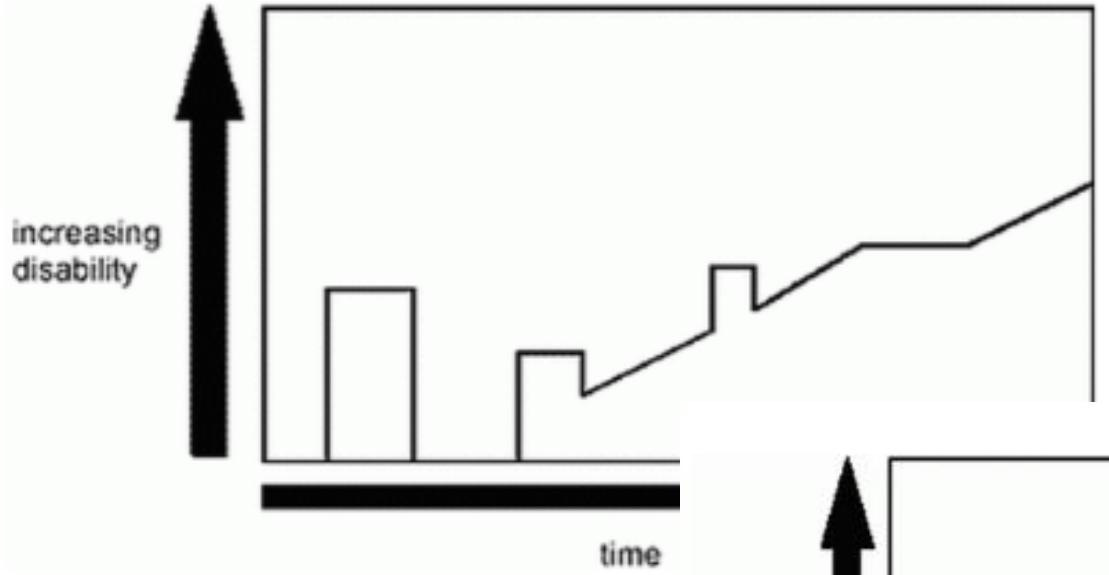
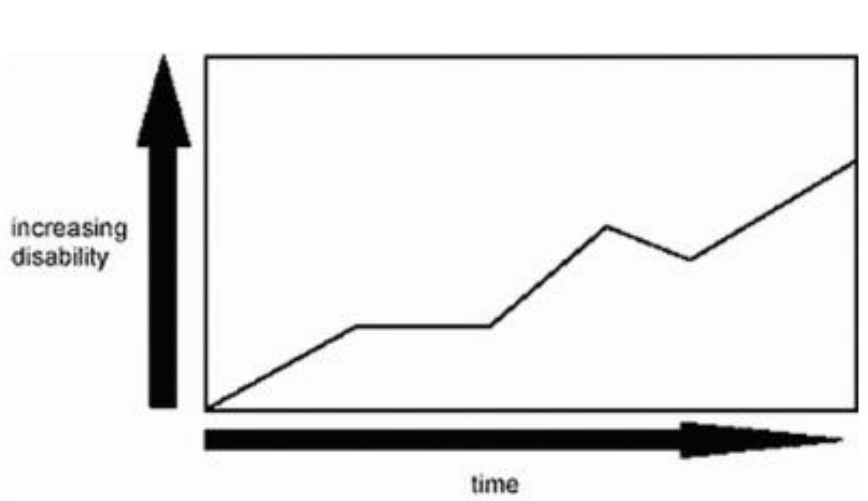


MS Canada website

Secondary Progressive MS



Primary Progressive MS



Multiple Sclerosis: Disease Modifying Therapy (DMT)

- Numerous DMTs now available, with earlier treatment resulting in decreased disability accumulation

- Evolving definitions, changes in management approach for those with suboptimal treatment response, and brain and spinal cord radiological monitoring of subclinical lesions burden
  → ***advanced disability such as wheelchair dependence is less common***

Most patients with MS are now expected to have similar life expectancies to the general population

MS is a chronic disease, requiring long-term symptomatic management

There are no guidelines to help navigate discontinuation of DMTs

Palliative care needs in Multiple Sclerosis

90,000
people are living with MS. This equates to 1 in every 400 people.

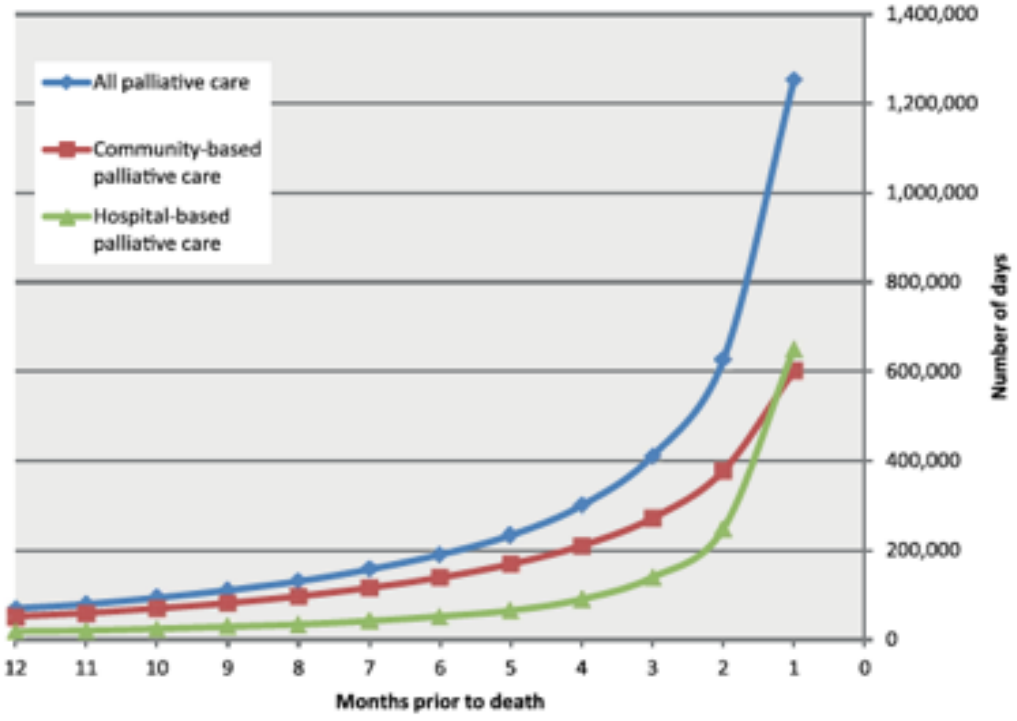
43
years is the average age of an MS diagnosis.

75%
of people with MS are women.

90%
of people are initially diagnosed with relapsing-remitting MS. 10% have progressive MS.

Filippi et el. Nature Reviews Disease Primers. 2018
Taylor et al. Neurology. 2019
The Consortium of Multiple Sclerosis Centers. www.mscare.org

What do we know about last years of life in MS?



How is palliative care delivered in persons with MS and what affects optimal and suboptimal care?

DESCRIBE THE DELIVERY OF HEALTHCARE IN THE LAST YEARS OF LIFE IN MS, INCLUDING THE MIX OF PHYSICIANS INVOLVED IN CARE, THE INTENSITY OF CARE, AND WHEN CARE IS BEING PROVIDED IN RELATION TO DEATH.

DESCRIBE **DISTINCT TYPOLOGIES OF CARE FOR MS PATIENTS IN THE LAST YEARS OF LIFE,** ACCORDING TO PHYSICIAN MIX, PLACES OF CARE, AND CAUSE OF DEATH. IDENTIFY OPTIMAL AND SUB-OPTIMAL CARE

IDENTIFY PATIENT, HEALTH SYSTEM, AND PROVIDER CHARACTERISTICS WITHIN EACH TYPOLOGY. IDENTIFY THOSE RECEIVING SUB-OPTIMAL CARE TO ALLOW FUTURE TARGETED INTERVENTIONS TO IMPROVE EOL CARE.

Tanuseputro et al. Palliative Medicine. 2017

Study Design

Retrospective cohort study using population-based health administrative database (Institute for Clinical Evaluative Sciences, ICES)

Data source: Patient demographics (RPDB; age, sex, rurality), MD billing claims (OHIP), ED visits (NACRS), hospitalization records (DAD), LTC and home care information, etc

Study population: Decedent cohort of all individuals aged > 18yo with MS who died in Ontario 2016-2020. Previously validated algorithm using ICD-9/10 diagnoses codes recorded during ≥3 hospitalizations or outpatient visits

HEALTH SERVICES ADMINISTRATIVE DATA

- Physician billings
- Prescription drug claims for those 65 and older
- Inpatient hospital discharges
- Emergency and ambulatory care visits
- Home care and rehabilitation claims
- Long-term care visits

PEOPLE AND GEOGRAPHY

- Population estimates
- Canada census profiles
- Death records
- All Ontarians eligible for health care benefits

SPECIAL COLLECTIONS

- Registries (Stroke, cancer, cardiac care)
- First Nations and Métis
- Developmental disabilities
- Federal immigration information

DERIVED CONDITIONS

- Diabetes, Hypertension, COPD, Asthma, Acute MI, CHF, IBD

SURVEY DATA

- Health Surveys

CLINICAL DATA

- Patient information collected with consent in primary clinical studies
- Supplementary clinical data from individual hospitals and other institutions

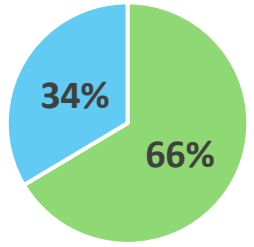
CHART ABSTRACTION DATA

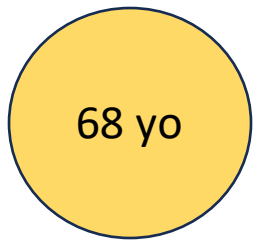
- Information on processes and quality of care collected directly from patients' charts

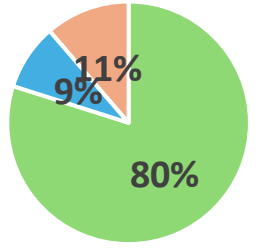
Al-Sakran al. The Canadian Journal of Neurological Sciences. 2018

Cohort Characteristics

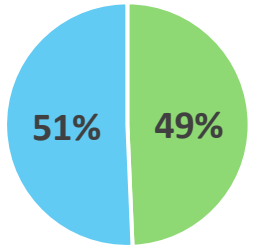
Decedents with MS (n=1,975)

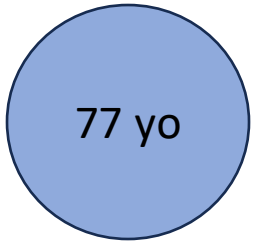


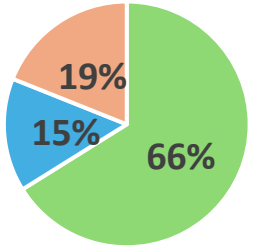




without MS (n=500,904)







< 3 conditions 3-4 conditions > 4 conditions

Characteristics	Decedents with MS, n (%)[a]	Decedents without MS, n (%)[a]
Rurality		
Rural	(11)	(13)
Urban	(89)	(86)
Immigration status		
Yes	(2)	(7)
No	(98)	(93)
Chronic conditions		
Cancer	(29)	(43)
CAD	(8)	(15)
Congestive heart failure	(15)	(26)
COPD	(11)	(17)
CKD	(18)	(24)
Diabetes	(25)	(31)
Dementia	(6)	(14)
Stroke	(6)	(7)
Mood disorder	(22)	(21)

*statistically significant values are highlighted in pink
*Actual values are not shown for distribution purpose

Receipt of Palliative care

	With MS, n (%)	Without MS, n (%)
Receipt of Palliative care		
Last 1 month of life	(51)	(52)
Last 3 months	(55)	(55)
Last 1 year	(58)	(57)
Last 5 years	(62)	(60)
Location of Palliative care		
Home	(12)	(12)
Hospital inpatient	(6)	(7)
Outpatient	(23)	(21)
Third party	(20)	(19)
Not received	(38)	(40)
Place of death		
Home	(16)	(18)
Hospital	(45)	(46)
ICU	(15)	(12)
LTC	(28)	(18)
Complex	(8)	(8)
Other	(4)	(11)

Outpatient Physician care

	With MS, n (%)	Without MS, n (%)
Outpatient Family Medicine visits		
Last 1 month of life	(47)	(53)
Last 3 months	(60)	(68)
Last 1 year	(73)	(83)
Last 5 years	(89)	(96)
Outpatient Neurology visits		
Last 1 month of life	(3)	(1.2)
Last 3 months	(7)	(3)
Last 1 year	(21)	(7)
Last 5 years	(49)	(17)

Outpatient Ophthalmology visits		
Last 1 month of life	(1)	(2)
Last 3 months of life	(3)	(6)
Last 1 year of life	(11)	(18)
Last 5 years of life	(32)	(42)
Outpatient Urology visits		
Last 1 month of life	(2)	(1.6)
Last 3 months	(6)	(5)
Last 1 year	(18)	(11)
Last 5 years	(39)	(23)
Outpatient Physical Medicine & Rehabilitation visits		
Last 1 month of life	(1)	(0.2)
Last 3 months	(3)	(0.6)
Last 1 year	(7)	(2)
Last 5 years	(20)	(6)

Interventions

	With MS, n (%)	Without MS, n (%)
Percutaneous Endoscopic Gastronomy		
Last 1 month of life	(0.6)	(0.3)
Last 3 months	(1.3)	(0.5)
Last 1 year	(2.6)	(0.9)
Last 5 years	(5.1) ★	(1.3)
Tracheostomy		
Last 1 month of life	(0.4)	(0.4)
Last 3 months	(0.7)	(0.6)
Last 1 year	(1.3)	(1.0)
Last 5 years	(2.5) ★	(1.5)
Urinary Catheterization		
Last 1 month of life	(1.1)	(0.5)
Last 3 months	(2.1)	(0.9)
Last 1 year	(3.8)	(1.7)
Last 5 years	(9.5) ★	(4.0)

Odds of dying in hospital among patients with MS & Odds of receiving palliative care

Description	Hospital Death, OR (95% CI)
Sex	
Male	Ref.
Female	1.12 (0.89-1.41)
Number of comorbidities	
< 3 conditions	Ref.
3 - 4 conditions	**2.73 (1.78-4.19)**
> 4 conditions	0.85 (0.62-1.16)
Rurality	
Urban	Ref.
Rural	**1.81 (1.21-2.70)**
Receipt of palliative care in the last 5 years of life	
Yes (ref: none)	**0.47 (0.37-0.60)**
Outpatient neurologist visit in the last 5 years of life	
Yes (ref: none)	1.00 (0.79-1.26)

Description	Receipt of Palliative Care, OR (95% CI)
Sex	
Male	Ref.
Female	0.95 (0.77-1.16)
Number of comorbidities	
< 3 conditions	Ref.
3 - 4 conditions	1.12 (0.81-1.56)
> 4 conditions	**3.64 (2.50-5.29)**
Rurality	
Urban	Ref.
Rural	**0.74 (0.55-0.99)**
Outpatient neurologist visit in the last 5 years of life (change the discussion point)	
Yes (ref: none)	**1.20 (0.99-1.47)**
Outpatient physiatrist visit in the last 5 years of life	
Yes (ref: none)	**1.24 (0.97-1.60)**
Outpatient urologist visit in the last 5 years of life	
Yes (ref: none)	**1.47 (1.20-1.80)**

Summary & Lessons learned

Our study confirmed known **MS epidemiology** – more females, die at younger age, less comorbid

MS patients received **similar palliative care** in the last year of life

Large number of MS patients **die in hospital** while more in ICU

Outpatient neurology visits for MS decline **significantly in the last** years of **life**

Odds of dying in hospital was low in those who received palliative care (vs. **high in rural**)

Odds of receiving palliative care was high in those seen by urologist (vs. **low in rural**)

Future directions

MC-PC care in resource limited areas & different geographical regions

What components of an MS-PC intervention are most useful? What is an effective integrated care model?

Characterization of palliative care (place, type, frequency)

Optimal timing of MS-PC

Race and socieconomic factors

Healthcare cost

Palliative care in MS outcome

Validated MS-PC outcome measures? (PCOS-MS)

Patient, Caregiver and Provider perspectives

Multiple Sclerosis: Managing uncertainty

- It is not possible … diagnosis, to … re rate of disability acc… ity of …
- **Multiple a…**
  - When a r…
  - What neur… ely and long-term)
  - How much ***disabi…*** umulates over time
  - Effect, side-effects, and … of DMTs
  - Impact of acute & long-term … lity on family, carers, identity

WHEN SEEING PATIENTS, DON'T FORGET ABOUT DISTRESS & GRIEF DUE TO MULTIPLE SOURCES OF LOSS, DIFFICULTY COPING, AND ADAPTATION TO CHANGING NATURE OF ILLNESS

Multiple Sclerosis: Symptomatic Management

TABLE 1. COMMON MULTIPLE SCLEROSIS SYMPTOMS AND THEIR MANAGEMENT

Symptom	*Nonpharmacological management*	*Pharmacological management*
Fatigue	Exercise, physical therapy for energy conservation strategies, cooling garments (if heat sensitive)	Amantadine, modafinil, armodafinil, methylphenidate Note: although the above pharmacotherapy has been used off-label, recent evidence suggests lack of benefit[10]
Depression	Psychotherapy/counseling	Antidepressant medications (SSRIs, SNRIs, TCAs, Bupropion). Avoid interferons
Pseudobulbar affect	Reassurance	Dextromethorphan/Quinidine, SSRIs, TCAs
Cognitive impairment	Exercise, occupational therapy, social engagement, rule out contributions from fatigue/depression/ sleep disturbance/medications	None Note: there is not good evidence to support routine use of Acetylcholinesterase inhibitors[11]
Pain—trigeminal neuralgia	Referral to neurosurgery for evaluation if refractory (failing >2 medications)	Carbamazepine, oxcarbazepine, baclofen, lamotrigine
Pain—other neuropathic pain	Physical therapy, biofeedback, TENS unit	Gabapentin, pregabalin, TCAs, SNRIs, opiates, cannabinoids
Spasticity	Stretching, exercise, physical therapy, referral to physical medicine and rehabilitation colleagues	Baclofen (oral or intrathecal), tizanidine, gabapentin, dantrolene, benzodiazepines, cannabinoids, and botulinum toxin injections
Neurogenic bladder	Referral to pelvic floor physiotherapy, evening fluid restriction, avoidance of caffeine/alcohol and other irritants, scheduled voiding, double voiding, intermittent catheterization, neuromodulation, surgical management	For urinary frequency and incontinence: anticholinergics/antispasmodic (oxybutynin, solifenacin), beta-3 adrenergic receptor agonist (mirabegron), desmopressin, detrusor botulinum toxin injection For urinary retention: alpha-adrenergic agents *Sphincter-detrusor dyssynergia may require a combination of above strategies
Constipation	Hydration, physical activity as tolerated, pelvic floor therapy, timed bowel evacuation, digital rectal stimulation, abdominal massage, biofeedback	Laxatives, polyethylene glycol, suppositories, linaclotide,[12] caution with excessive fiber, reduction in contributing medications
Sexual dysfunction	Counseling, pelvic floor therapy, lubricants (female patients), penile prosthetics (male patients)	Phosphodiesterase inhibitors (male patients); reduction in contributing medications

SNRIs, selective serotonin and norepinephrine reuptake inhibitors; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic tidepressants; TENS, transcutaneous electrical nerve stimulation.

Ramanathan et al
J Palliat Med. 2023 Nov;26(11)

Causes of death in MS

Infection – respiratory, UTI

Advanced disability and immobility related complications e.g. aspiration pneumonia

Recommendations for Palliative Care in MS Care

EAN guideline on the care of people with severe, progressive MS with 34 recommendations on care. Home-based palliative care (either general or specialist) is recommended for patients—based on weak evidence (Solari et al., 2020)

Canadian MS Working Group (2020) recommends consider discontinuing treatment in inactive patients with progression, especially if older (>60 years) with a prolonged period (>5 years) with no new inflammatory disease activity.

Triggers for referral to neuropalliative care physician OR to palliative care

- need for a walking aid (i.e. EDSS 6) to walk about 100 m with or without resting – should the cut-off be EDSS 8?
- To discuss disease progression
- Identification and addressing of psychosocial needs
- to support caregivers
- pain management
- Is it the first time a patient needs to apply for assistive technology
- need for nursing home care or admission to hospital
- dysphagia and associated discussion around artificial hydration and nutrition
- need to discuss advance directives, and assess competency and/or consent issues

Special Communication

February 3, 2025

Research Priorities in Neuropalliative Care

A Consensus Statement From the International Neuropalliative Care Society

Winnie K. Lau, MD[1]; Corey R. Fehnel, MD, MPH[2,3]; Zachary A. Macchi, MD[4]; Ambereen K. Mehta, MD, MPH[5,6]; Manon Auffret, PharmD, PhD[7,8,9]; Jori F. Bogetz, MD[10,11]; Jori E. Fleisher, MD, MSCE[12]; Jerome J. Graber, MD, MPH[13,14]; Heather E. Leeper, MD, MS[15]; Heena R. Manglani-Terranova, PhD[3,16]; Susanne Muehlschlegel, MD, MPH[17,18]; Emily L. Mroz, PhD[19]; Elizabeth J. Pedowitz, MD[20]; Usha Ramanathan, MSc, MD[21]; Max Sarmet, SLP, MSc[22,23]; Nathan A. Shlobin, BA[24]; Leonard Sokol, MD[25,26]; Susan Allyson Weeks, MA[27]; Jiayun Xu, PhD, RN[28]; Helen Bundy Medsger[29]; Claire J. Creutzfeldt, MD[13,30]; Ana-Maria Vranceanu, PhD[3,16]; Darin B. Zahuranec, MD, MS[31]; David Y. Hwang, MD[1]

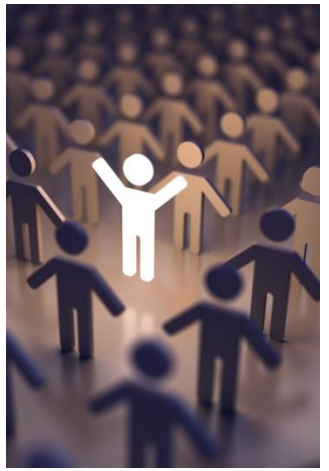
Take home points

- The changing therapeutic landscape in ***Multiple Sclerosis (MS)*** has affected prognostication and symptom management, with people living longer with less cumulative disability
- Decedents with MS, in Ontario, receive similar palliative care to decedents without MS – BUT decedents with MS receive less neurology care at the end of life, are more likely to die in hospital, and are more likely to have interventions such as PEG and tracheostomy
- Neuropalliative care clinics can bridge the gaps in symptom management and goals of care discussions between neurologists and palliative care physicians

CSPM
Canadian Society of Palliative Medicine

SCMP
Société canadienne de médecine palliative

Questions?



PCAND
Palliative Care for Advanced Non-Malignant Diseases

Advanced Learning in PALLIATIVE MEDICINE

Thank you!

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- Dr. Ramanathan: dr.usha.ramanathan@gmail.com

Educational resources

Multiple Sclerosis & Palliative Care

- Latorraca CO, Martimbianco ALC, Pachito DV, Torloni MR, Pacheco RL, Pereira JG, Riera R. Palliative care interventions for people with multiple sclerosis. Cochrane Database Syst Rev. 2019 Oct 22;10(10):CD012936. doi: 10.1002/14651858.CD012936.pub2. PMID: 31637711; PMCID: PMC6803560.Murteira D, Rego F. Integrating palliative care in patients with advanced multiple sclerosis: a scoping review. Ann Palliat Med. 2024 Mar;13(2):386-396. doi: 10.21037/apm-23-455. PMID: 38584475.
- Solari A, Oliver D; EAN Guideline Task Force. Palliative care in multiple sclerosis: European guideline. Mult Scler. 2020 Aug;26(9):1009-1011. doi: 10.1177/1352458520926467. Epub 2020 Jun 9. PMID: 32513039.

Neuro-palliative care resources

- Best Case/Worst Case Neurology: https://www.youtube.com/watch?v=uaY-_OF70VY
- EPEC-N: EPEC for Neurology: EPEC: Education in Palliative and End-of-Life Care: Feinberg School of Medicine: Northwestern University
- Case Studies in Neuropalliative Care, ed: Robinson MT, 2018
- Neuropalliative Care: A Guide to Improving the Lives of Patients and Families Affected by Neurologic Disease, eds: Creutzfeldt CJ, Kluger BM, Holloway RG, 2019
- Handbook of Clinical Neurology: Neuropalliative Care, 2019, eds: Miyasaki JM, Kluger BM, 2023
- Top 10 Tips Palliative Clinicians Should Know About: Many neuropalliative topics, including MS, ALS, PD, Neuro-Oncology, Seizures
- Fast Facts, available at https://www.mypcnow.org/fast-facts/
- International Neuropalliative Care Society, www.inpcs.org