



Stroke Rehab in the Younger Adult (<60yo)

Getting back to life after acute care
"Survive to Thrive"

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No Disclosures






Purpose

- Review what makes rehab for the younger adult (<60yo) stroke survivor different than the typical stroke survivor
- Review the common challenges of the younger adult stroke survivor
- Learn tips on how to address social determinants of health during stroke rehabilitation and recovery



Objectives

1. State the most common type of stroke related to COVID-19
2. Identify at least 5 issues (medical and psychosocial) that may be more of a priority for the younger adult (<60yo) stroke survivor
3. Describe to the younger adult stroke survivor what their rehab journey might look like based on the evidence (ie. describe typical challenges and outcomes)



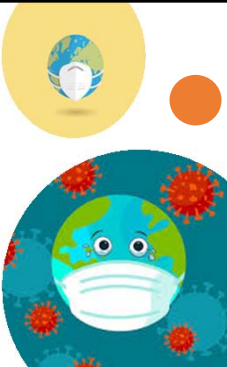
Presentation Overview

- Covid-19 related strokes in younger adults
- Medical and Psychosocial issues with a focus on...
 - Urinary incontinence
 - Sexual Health
 - Depression/ Anxiety
 - Lifestyle Factors
 - Interpersonal and Intimate relationships
 - Transitions in care

Update on Strokes from COVID-19

Neurological conditions due to COVID-19 - Systematic Review and Meta-Analyses (Dec 1, 2019 – May 14, 2020)

- 82 Neurological cases Mean age 62.3yo
 - 49% had cerebrovascular injury
 - 28% neuromuscular disorders (eg. Guillain-Barre Syndrome)
 - 23% encephalitis/encephalopathy
- Cerebrovascular Injury:
 - 87.5% ischemic stroke (mainly large vessel occlusion)
 - 5% cerebral vein thrombosis
 - 5% intracerebral hemorrhages
 - 2.5% SAH and ICH



Ghannami et al. Journal of Neurology 2020 267:3135-3153

Stroke and COVID-19 in Younger Adults



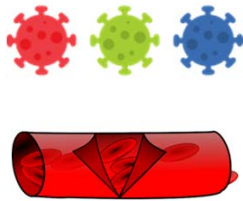
Case Report May 2020 (N Eng J Med 382:20)

- Mt. Sinai Health System – New York City
- 5 Large Vessel Ischemic Stroke Cases < 50 yo from Mar 23 to Apr 7, 2020 (7x higher)
 - 33yo, 37yo, 39yo, 44yo, 49yo

Conclusions (Lancet Comment (19)9):

- COVID-19 related Strokes in Younger adults can occur:
 - without typical vascular risk factors
 - With **no or only mild** respiratory symptoms
- Healthy young pts who present with stroke should be tested for COVID-19
- Mild COVID-19 respiratory symptoms and new neurologic symptoms → stroke work-up

Oxley et al. The New England Journal of Medicine. Published on April 28, 2020, at NEJM.org; Fifi, JT, and Mocco J. Lancet Comment (19)9; p. 713-715.



Cause of COVID related stroke:

- Increased hypercoagulable state
- Vascular endothelial dysfunction
- Mechanism unknown

Stats Canada – as of April 2020



- Cause of death in Canada
 1. All types of Cancer
 2. Heart Disease
 3. Stroke ← COVID was #3 in certain months in 2020
 4. Accidents
 5. Chronic lower respiratory disease
 6. Influenza and pneumonia
 7. Diabetes
 8. Alzheimer's disease
 9. Suicide
 10. Kidney diseases (nephritis, nephrotic syndrome, and nephrosis)

How common is stroke in the Younger Adult (< 60yo)?

• 19% of Stroke/TIA hospital admissions were 20yo to 59yo
(2017 Stroke Report – Heart & Stroke Foundation of Canada)

• Approx. 4% of strokes are 18yo to 45yo
(Heart & Stroke Foundation of Canada)

• Dx of Ischemic Stroke in younger adults is on the rise (American Stroke Association)
• Better identification, Better Imaging
• Rising prevalence of obesity, HTN, DM, ↑ lipids, recreational drugs



Stroke Risk Factors in the Younger Adult

• Typical stroke risk factors seen in all ages:
• HTN, ↑ lipids, DM, smoking, obesity...COVID-19

• Risk factors seen in the Younger Adult:
• Contraception containing estrogen
• Pregnancy
• Migraine w/ aura (more common in women)
• Genetic Conditions (eg. Thrombophilias, Congenital Heart Disease, Metabolic, Vasculopathies)
• Heavy or heavy-episodic alcohol consumption
• Recreational drug use (methamphetamine, cocaine, heroin etc.)
• Carotid Dissection (commonly related to trauma)
• Cryptogenic (up to 30%)

Stroke 2020 March;51(3): 729-735

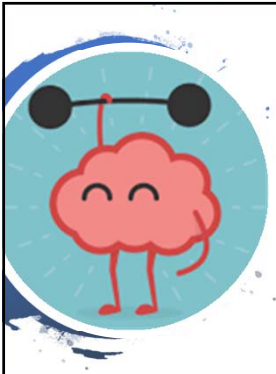



The Good News...

Younger Stroke Survivors tend to have:

- Better neurologic recover
- Less functional disability
- Greater long-term survival

From ebrsr.com





The Bad News...

- Younger Stroke Survivors tend to have:
 - More symptoms of depression and anxiety
 - Lower self reported quality of life and social functioning despite good physical recovery
 - Higher rates of relationship breakdown

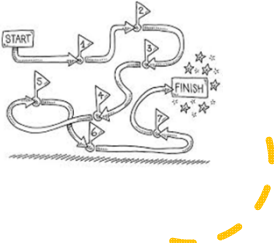
From ebrsr.com

Case Mr. A

- 45 years old, right handed male
- **Diagnosis:** Right MCA stroke (frontal/parietal) secondary to uncontrolled hypertension
- **Past Medical History:** hypertension, hyperlipidemia; normal BMI, No DM or CAD
- **Medications:** Anti-hypertensive, lipid lowering medication
- **Functional Status:** Left sided weakness (CMSA 3 leg/foot, CMSA 5 arm/hand)
- **Cognitive performance:** MOCA 21/30; Visuospatial and executive functioning difficulties, poor insight into changes in cognitive function
- **Behavioural changes:** increased impulsivity, easily distracted
- **Psycho-social history:** Minimum wage income, no private insurance benefits, common law partnership, limited social network, occasional use of recreational drugs

Mr. A's Rehab Journey and Goals

- Stroke rehab for 2 weeks
- Urinary incontinence (no bowel incontinence)
- Anxiety/Depression
- Personality change – forgetful, impulsive, disorganized, overconfident in cognitive and physical abilities, low insight, poor judgment
- Partner expressing relationship tension
- Sexual health questions
- Wants to return home, return to work,



Medical Priorities of the Younger Adult Stroke Survivor

Often no different from the >60yo stroke survivor but the priority *order* may be different

- Physical Rehab
- Bladder and Bowel
- Anxiety/Depression
- Sexual Health
- Stroke Prevention (BP, Cholesterol, DM)
- Cognitive Rehab
- Fatigue
- Communication/Swallowing
- Tone/Spasticity
- Sleep
- Pain
- Personality Change (eg. Frontal lobe Sx's)



Psychosocial Priorities of the Younger Stroke Survivor:

- Living independently (housing, accessibility, transportation)
- Life Roles
- Support systems and Transitions
- Mental Health
- Maintaining Partner Relationship
- Lifestyle Factors (substance use, exercise, socialization)
- Grief, Coping with loss and change
- Family planning
- Driving
- Personal Image
- Recreational pursuits (eg. Collision/contact/extreme sports, reading, etc.)
-



Poll Question

I troubleshoot around issues of urinary incontinence with pts.

- Often
- Sometimes
- Never



Urinary Incontinence (UI) Post Stroke



- Incidence 21% to 79%
- Usually resolves spontaneously without intervention or tx within 8 wks post stroke onset
 - Most freq with more severe strokes and pre-morbid incontinence
 - 14-19% persists at 6 mos post stroke
 - Persistent urinary incontinence is associated with poor long-term prognosis for functional recovery

From ebrsr.com

Urinary Incontinence (UI) Post Stroke



- Younger stroke patients < 65yo were more likely to regain spontaneous voiding ability (75.5% vs 50%)
- Multiple causes/factors (failure to store, failure to empty; poor mobility, diuretics)
 - Cause is **NOT** predictable by stroke lesion location

From ebrsr.com

Management of Urinary Incontinence Post Stroke

(Adapted from American Stroke Association)

- Determine the cause, R/O UTI (log fluid intake, premonition, frequency, amt)
- Timed voiding, timed fluid intake
- Limit coffee, alcohol, possibly spicy foods
- Wear clothes that are easier to self manage
- Pelvic floor exercises
- Mx (weigh risks and benefits)
- Incontinence pads/briefs
- Urology referral
- Other – limited evidence (eg. Acupuncture, electroacupuncture, TENS, TPTNS) Cochrane Review 2019

**There are NO
Easy Solutions!
It takes a team!**

Depression and Anxiety in the Younger Stroke Survivor

(Kapoor et al. Stroke. 2019;50;2359-2363; ebrsr.com; Guirard et al 2016, France; Robinson and Jorge, 2015)

- Younger stroke survivors (<50) may have approx. 3x greater symptoms of depression and anxiety
- Risk Factors for post stroke **Depression**:
 - Hx of Depression
 - Stroke Severity and prior history of stroke
 - Functional Dependence
 - Cognitive Impairment
 - Female gender
- Risk Factors for post stroke **Anxiety**:
 - Hx of Depression
 - Stroke Severity
 - Early Anxiety post stroke (acute phase)



Depression and Anxiety in the Younger Stroke Survivor

(Kapoor et al. Stroke. 2019;50;2359-2363; ebrsr.com)

- Depression and anxiety may explain why younger survivors often report poor quality of life and social functioning, despite good physical recovery after stroke
- Specific Contributors unknown
- Possible contributors:
 - "Prime of life"
 - Greater impact; loss of independence, hopes, dreams
 - Body image
 - Many Life roles



What Can We Do?



1. Use validated screening tool
 - Center for Epidemiological Studies Depression Scale (CES-D)
 - Patient Health Questionnaire-9 (PHQ-9)
 - Hamilton Depression Rating Scale (HDRS)
2. Provide education on post stroke depression and anxiety
3. Facilitate access to community and mental health supports and resources


Examples: Mind Beacon, AbilitiCBT

Lifestyle Factors

Therapeutic Techniques

Psychoeducation


Community Supports and Resources



Social Participation

Young stroke survivors want more...

- Peer support groups
 - Share stories and coping strategies, new relationships, normalization, validation, and acknowledgement of experiences with chronic illness
 - Some Example Groups:
 - Brain Injury Society of Toronto
 - March of Dimes
 - Ontario Brain Injury Association
- Empowerment of informal support networks



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Partner relationships

- Limited number of studies
- Separation and divorce rates are higher in working-aged stroke survivors with children (Trygged, Hedlund and Kareholt 2011)
- Lower relationship satisfaction in the spouse compared with stroke survivor (Anderson and Keating 2017)
- 3 themes in marriage post-stroke (Anderson and Keating 2017)
 - 1) **Chaos in the marriage**
 - 2) **Work to Re-Establish the Marriage**
 - 3) **Evolution of the marriage**



Themes of Parallel Relationships and Separation

(Anderson, 2017)

- Able to work out care but unable to reconnect
- Differences in expectations around emotional involvement and roles
- Disagreement about what the stroke survivor should or should not do based on safety or ability
- *Survivor's perspective*
- *Spouses' perspective*



Themes of Strong Partnerships Post Stroke

(Anderson, 2017):



- **Commitment** to a partner or marriage
- **Reaching Agreement** on changed roles
- **Finding Activities** they both enjoyed

"We are a team. It's attitude towards life. Accept what life throws at you."

"We had to relearn how to relate to each other"

"We don't always agree, but we listen to what each other says."

Supporting caregivers and relationships

- Interventions to enhance couples' **communication** had the largest effects on **health** and **relationships**
- Spousal stress is often attributed to issues around the spouse coping with care **rather than** the couple's relationship
- Respite or Relationship Counselling?
- Future research?



Tips for your patient:

- Mutuality
- Reconnecting
- Autonomy
- Body Image
- Power balance
- Socialize together





Poll Question

- I feel comfortable talking about sexual health as it pertains to my profession
- Very Comfortable
 - Somewhat Comfortable
 - Not Comfortable

(eg. positioning, spasticity management, bed equipment, energy conservation)

Am I ready to have sex? Will it cause another stroke?

- Body Image
 - Bladder or bowel incontinence/risk of UTI's
 - Contraception
 - STD prevention
 - Increased or decreased sexual interest and arousal
 - Executive Function/Impulsivity
- Medical questions:
- Cardiac health - Can you climb 2 flights of stairs without cardiac Sx's?
 - Is bladder control/bowel control/spasticity/pain/weakness getting in the way?



Sexual Health Post-Stroke



- Limited studies, based on self reports
- Most studies are in males
- Most studies focus on the married heterosexual couple
- ??Culture
- Conflicting results regarding sexual dysfunction and stroke location

What we **do** know post stroke...

- Lower sexual interest and arousal
- Reduced sexual activity
- Reduced ability for erections, ejaculation/orgasm, vaginal lubrication

Tips for Sexual Activity Post-stroke

(Adapted from American Stroke Association and Stroke Engine)



- Encourage experimenting alone
- Reintroduce intimacy: holding hands, hugging, cuddling, kissing
- Aphasia: create your own language (eg. gestures, facial expression)
- Consider timing based on fatigue
- Avoid large amts of water 2 hrs prior
- Empty bladder prior
- Avoid alcohol
- Contraception/STD prevention
- Lubrication
- Pillows for positioning (eg. Hemiparetic side)
- May need Mx (MD to discuss side effects)
- Anticipate set backs

STROKE ENGINE

Assessments • Interventions • Consequences • Resources • About • Contact

Home • Consequences • Sexuality

Sexuality

Introduction

Patients/Family Information

Evidence Reviewed as of before: 16/12/2009

T H E
ULTIMATE
GUIDE TO
SEX AND
DISABILITY

For all of us who live with disabilities,
chronic pain & illness

By Miriam Kaufman, M.D., Cary Silverberg, and Fran O'Brien

Exercise Post Stroke:

Guidelines for Community Based Exercise Programs for People with Stroke

- 150 min/week of Cardiovascular exercise
- Improves
 - Brain health and Cognition
 - Lowers blood pressure
 - Improves cholesterol levels
 - Controls blood sugar
 - Reduces sleep apnea
 - Improves mobility
 - Improves bone health



Developed by the Guidelines for Community Based Exercise Programs for People with Stroke Working Group & Endorsed by the Ontario Stroke Network, October 2010

First step....What are you interested in?

- Consult with your Allied Health Team, including your Recreational Therapist



Adapted Recreational Pursuits

Home / Sports & Clubs / Golf



- | | | | |
|----------------|--------------------|--------------------|----------------------------|
| Alpine Skiing | Dance | Powerchair Hockey | Table Tennis |
| Amputee Hockey | Dragon Boat Racing | Powerlifting | Waterskiing / Wakeboarding |
| Archery | Equestrian | Rowing | Wheelchair Basketball |
| Athletics | Fishing | Running | Wheelchair Curling |
| Baseball | Goalball | Sailing | Wheelchair Fencing |
| Boccia | Golf | Sitting Volleyball | Wheelchair Rugby |
| Canoe / Kayak | Ice Skating | Sledge Hockey | Wheelchair Tennis |
| Circus Arts | Marital Arts | Soccer | Yoga |
| Cycling | Nordic Skiing | Swimming | |

Transitions in Care - Will I be able to go home?

- 95% of stroke survivors <50 yo go home!
- 5% go to a chronic care facility following formal rehab
- Reasons for not going home:
 - Severe stroke
 - Lack of supportive caregiver
 - Caregiver's health deteriorates
 - Caregiver unable to cope with the continuous stress caused by increased care requirements

HAPPINESS IS



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Tips for transitions in care


- Assess and address issues that contribute to psychosocial stress
- Explore longer-term housing/care options if needs outweigh what is available at home
- Connect patient/ caregivers to community programs that help stroke survivors reintegrate in community and participate in life roles



Mr. A: Post Rehab

- CMSA 5 leg/foot, CMSA 6 arm/hand
- Urinary incontinence resolved with time
- Maintained intimacy and resumed sexual activity; no medications
- Recognizes his needs and accepts assistance with some instrumental activities from partner
- Referred to CBT psychotherapy program for depression and continuing medication treatment
- Joined peer support group to help with adjustment to illness
- Partner reports high stress and joined support group
- Partner relationship is strained; they spend quality time walking together daily


STROKE IN YOUNG ADULTS
A RESOURCE FOR PATIENTS AND FAMILIES



What we've learned from our patients...


"The stroke was both the worst experience and one of the best experiences of my life. The stroke gave me the opportunity to re-evaluate my life and my career and think about what I want and what makes me happy and fulfilled"

- Nikki, who had a stroke at age 34



What are the most important things that healthcare professionals can do...

- Listen and Foster A Safe Space
- Advocate
- Educate Patient and Families
- Motivate



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