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The Value of Occupational Therapy in the Acute Care Management of Patients with COVID-19

By: Lyndsay Laxton, OTR/L & Julia Smith, MS, OTR/L

Disclosures

- Presenter Disclosure: Financial: Lyndsay Laxton and Julia Smith received an honorarium for presenting this course. Non-financial: Lyndsay Laxton and Julia Smith have no relevant non-financial relationships to disclose.
- Content Disclosure: This learning event does not focus exclusively on any specific product or service.
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Learning Outcomes

After this course, participants will be able to:

- Describe 3 functional performance deficits commonly seen in patients experiencing COVID-19.
- Identify 3 outcomes measures occupational therapy practitioners can utilize with this patient population.
- List 5 evidence-based interventions occupational therapy practitioners can employ across the acute care rehabilitation continuum.

CONTINUED

Overview

- Overview of COVID-19
- Caseload Management
- Hospital-Acquired Deficits
- Outcome Measures
- Evidence-Based OT Interventions
- Case Studies
- Q&A

Coronavirus 19 Disease

- Virus: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS- Cov 2)

- Per WHO guidelines:
  - Contact/droplet precautions except during aerosolizing procedures
  - Examples of airborne precautions:
    - Tracheostomy
    - Intubation
    - CPR
    - High flow O2

WHO, 2020

Coronavirus 19 Disease

Illness Severity

- Mild to moderate: 81%
  - mild symptoms up to mild pneumonia
- Severe: 14%
  - dyspnea, hypoxia, or >50% lung involvement on imaging
- Critical: 5%
  - respiratory failure, shock, or multiorgan system dysfunction

CDC, 2020

Coronavirus 19 Disease

Clinical Progression

- *Day 5-8*: dyspnea
- *Day 8-12*: acute respiratory distress syndrome (ARDS)
- *Day 10-12*: ICU Admission

**Of note: Clinicians should be aware of the potential for some patients to rapidly deteriorate one week after illness onset*

CDC, 2020

Coronavirus 19 Disease

Clinical Presentation

- Generalized weakness
- Dyspnea
- Delirium
- Upper extremity plexopathies
- Fatigue
- Anxiety

Other Considerations

- Social isolation
- Occupational deprivation
- Stigma
- Caregiver exposure/illness

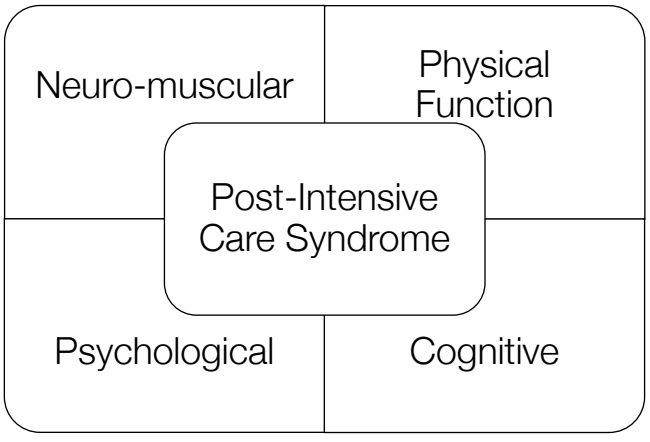
AOTA, 2020

Caseload Management Considerations

- Prioritization
  - Prioritize those most directly impacted by intervention
  - Maximize timing of evaluation
  - Promote throughout
    - ICU> floor transitions, Discharge planning
- PPE Preservation
  - Cluster care
  - Screen patients prior to evaluation
  - Coordinate with RN/PT/SLP
- Discharge Option Availability
  - COVID SNF/IRF beds
  - Family COVID status
    - Can they assist at discharge?

AOTA, 2020

Hospital-Acquired Deficits



Desai, Law, & Needham (2013)

Q1

CONTINUED

Hospital-Acquired Deficits

- Neuromuscular
  - Critical Illness Polyneuropathy & Myopathy
  - Diffuse atrophy
  - Brachial plexus injuries
- Physical Function
  - Impairment in ADLs & IADLs
    - Increased caregiver support
  - Decreased 6-min walk distance
  - Less likely to return to work

Desai, Law, & Needham (2013)

CONTINUED

Hospital-Acquired Deficits

- Psychological
  - Depression
  - Post-traumatic stress syndrome
  - Anxiety
  - Grief
- Cognitive
  - Impairments in memory, attention, and executive functioning
  - Impairment in executive functioning is associated with higher rates of depression

Karnatovskaia et al., 2015
Wilcox et al., 2013

Q2

CONTINUED

Delirium in COVID-19

- Social Factors
  - Isolation, quarantine, increased healthcare professional workload
- Medical Factors
  - Deep sedation, prolonged MV, prolonged immobility, use of centrally acting drugs
- Psychological
  - Anxiety, stress, disorientation, delusions

Kofis et al., 2020

Outcome Measures

- Neuromuscular
  - Manual muscle testing (MMT)
  - Hand-held dynamometry
- Physical Function
  - ICU Mobility Scale
  - Functional Status Score for the ICU (FSS-ICU)
  - Boston University AM-PAC for ADLs
  - Katz Index of Independence in ADLs
  - Barthel Index

Outcome Measures

- Delirium
  - Confusion Assessment Method for the ICU (CAM –ICU)
  - Confusion Assessment Method – Severity (CAM-S)
  - Intensive Care Delirium Screening Checklist (ICDSC)
  - Brief Confusion Assessment Method (bCAM)

Q3&Q4

Outcome Measures

- Cognition
  - Richmond Agitation Sedation Scale (RASS)
  - The Orientation Log (O-Log)
  - Montreal Cognitive Assessment (MoCA)

Outcome Measures

- Psychological
  - Hospital Anxiety and Depression Scale (HADS)
  - Impact of Event Scale – Revised (IES-R)

Why Prone Positioning?

- Improves gas exchange efficiency
- Increases perfusion and recruitment of dorsal lung
- Mobilizes secretions

Resource for Images of positioning recommendations:
https://www.ficm.ac.uk/sites/default/files/prone_position_in_adult_critical_care_2019.pdf

Conscious Proning

Indications

- Patients above their baseline O2 needs
- Independently able to position themselves in prone

Contraindications

- Respiratory distress (accessory muscle use, RR over 35)
- Altered mental status
- Hemodynamic instability
- Physically unable (ex. morbid obesity, pregnancy, wounds)

Timing

- Goal to maintain 30 minutes - 2 hours as tolerated
- Can turn alternate into side lying for comfort
- If unable to tolerate, recommend HOB elevated >30 v flat bed supine

ICS, 2020

Q5

Prone Positioning of the Sedated Patient

- Indication: moderate to severe ARDS at least 12 hours after intubation, use of paralytics for vent synchrony

- "Swimmer's Position"
  - One arm abducted to 45-70 degree, elbow at 90
  - The other arm down at side
  - Head facing toward abducted arm, neck not extended
  - Slight scapular elevation
  - Chest supported
  - Pillows padding chest, pelvis, and knees

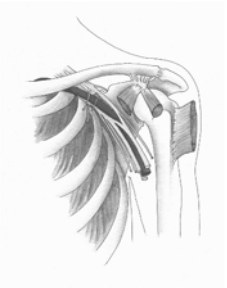
- Goal: 16 hours/ day
- Alternate abduction of arms and rotation of neck every 2 hours for skin protection and prevention of plexopathy
- Complications to monitor:
  - wounds
  - ETT dislodgment
  - brachial plexus injury
  - CRRT line flow issues
  - facial edema
  - Corneal abrasions

ICS, 2020

Q6

CONTINUED

Brachial Plexopathy



- **Prevention:**
  - Proper prone positioning
  - Nursing education
- **Assessment:**
  - Sensory, motor, and reflex assessment to identify level of injury
- **Treatment:**
  - Positioning
    - Ensure muscle nerves in functional positioning, not on tension
  - Splinting
  - Education
  - Compensatory strategies
  - Neuro-reeducation

Quick & Brown, 2020

Q7

CONTINUED

Early Mobility

- It is safe and feasible
  - Reduces risk of ICU-acquired weakness
- Coordinating with interdisciplinary team members
  - RN, CNA, PT, RT, etc.
- Progressive mobilization
  - Chair mode
  - Edge of bed/dangle
  - Transfer out of bed (passive vs. active)
- Optimize seating and positioning

Schweickert et al. (2009)
Parker, A., Sricharoenchai, T. & Needham (2013)
Clancy et al. (2015)

Q8

CONTINUED

Delirium Management

- Regulate sensory input
  - Apply hearing aids, dentures, glasses
- Sleep Hygiene
- Environmental modifications
  - Clock, calendar, lights on during the day
- Communication
  - Adaptive communication strategies
  - Collaborate with SLP
- Re-orientation

Clancy et al. (2015)
Alvarez et al. (2017)

Q9

Functional Engagement

- ADL re-training
- AE/DME training
- Energy conservation and pacing
  - Symptom identification and management
- Breathing techniques

Mental Health

- Cognitive engagement
  - Word search, crosswords, puzzles, maze
- Social engagement
  - Facetime, phone calls
- Establish a routine
- ICU Diary
- Mindfulness Activity

Q10

Case Study #1

- Sally - 78yo F
  - 45day hospital stay (20 days in ICU)
  - Son and daughter-in-law passed away
  - Husband is critically ill
- Activity Tolerance
  - ADL engagement
- Cognition
  - CAM-ICU for 10 days
  - bCAM negative on floor
- Psychological Trauma
  - Hospital journal, establish routine
- Social Isolation & Deprivation
  - Daily calls with her daughter
  - Leisure engagement

CONTINUED

Case Study #2

- Randy, 40 yo
  - Independent, highly active at baseline. No comorbidities
  - 38 day hospital stay
  - 22 day intubation prior to tracheostomy placement
- Activity tolerance
  - Frequent rest breaks
  - Chair positioning with nursing outside of session
- Hyperactive delirium
  - CAM + for 15+ days
  - ICU diary (at bedside, spouse at home journaling hospital course)
  - ADL engagement
- Anxiety
  - Breathing strategies
  - Face timing significant other during session
  - Maximize communication strategies due to difficulty pointing
- R radial nerve injury
  - Splinting
  - Positioning
  - Compensatory strategies

CONTINUED

Resources

- Facebook
  - COVIDRehab4OT Group (general COVID)
  - COVID4CCOT Group (critical care)
- Royal College of Occupational Therapists
  - www.rcot.co.uk
- Hospital Elder Life Program
  - www.hospitalelderlifeprogram.org
  - https://help.agscocare.org/products
- Johns Hopkins University
  - Everybody Moves Campaign
- Rehabilitative Care Alliance
  - http://rehabcarealliance.ca/

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Questions?

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CONTINUED

References

- Alvarez, E.A., Garrido, M.A., Tobar, E.A., Prieto, S.A., Vergara, S.O., Briceno, C.D., & Gonzalez, F.J. (2017). Occupational therapy for delirium management in elderly patients without mechanical ventilation in an intensive care unit: A pilot randomized clinical trial. *Journal of Critical Care, 37*.
- American Occupational Therapy Association (2020). The role of occupational therapy: Providing care in a pandemic. Retrieved May 13, 2020 from https://www.aota.org/Advocacy-Policy/Federal-Reg-Affairs/News/2020/OT-Pandemic.aspx.
- Bamford, P., Bentley, A., Dean, J., Whitemore, D., & Wilson-Baag, N. (n.d.). Guidance for Conscious Proning. Retrieved May 14, 2020, from https://www.ics.ac.uk/ICS/Pdfs/COVID-19/Guidance_for_conscious_proning.aspxCampbell, C. (2014). The role of occupational therapy in an early mobility program in the intensive care unit. *Special Interest Section Quarterly: Physical Disabilities,* 37(1).
- Centers for Disease Control and Prevention (2020). Interim clinical guidance for management of patients with confirmed coronavirus disease (COVID-19). Retrieved May 13, 2020 from https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html.
- Clancy, O., Edington, T., Casarin, A., & Vizcaychipi, M.P. (2015). The psychological and neurocognitive consequences of critical illness. A pragmatic review of current evidence. *Journal of the Intensive Care Society, 16*(3), 226-233.
- Costigan, F.A., Duffet, M., Harris, J.E., Baptiste, S., & Kho, M.F. (2019). Occupational therapy in the ICU: A scoping review of 221 documents. *Critical Care Medicine, 47*(12), 1014-1021.
- Desai, S.V., Law, T.J., Needham, D.M. (2011). Long-term complications of critical care. *Critical Care Medicine, 39*(2). doi: 10.1097/CCM.0b013e3181fd66e5
- Esbrook, C., Jordan, K., Robinson, M., and Wilcox, J. (2020). Occupational therapy in hospitals & inpatient care: Responding to a pandemic. Retrieved from https://myaota.aota.org/shop_aota/product/OL8102
- Karnatovskaia, L.V., Johnson, M.M., Benzo, R.P., & Gajic, O. (2015). The spectrum of psychocognitive morbidity in the critically ill: A review of the literature and call for improvement. *Journal of Critical Care, 30*, 130-137.
- Kho, M.E., Brooks, D., Namasivayam-MacDonald, A., Sandrar, R., & Vrkljan, B. (2020). Rehabilitation for patients with COVID-19. Guidance for occupational therapists, physical therapists, speech-language pathologists and assistants. School of Rehabilitation, McMaster University. http://srs-mcmaster.ca/covid-19/
- Kofis, K., Roberson, S.W., Wilson, J.E., Pun, B.T., Ely, E.W., Jezowka, I., Jezierska, M., & Dabrowksi, W. (2020). COVID-19: What do we need to know about ICU delirium during the SARS-CoV-2 pandemic? *Anesthesiology Intensive Therapy, 52*(2).
- Intensive Care Society (2019). Guidance: Prone Positioning in Adult Critical Care. Retrieved May 16, 2020, from https://ficm.ac.uk/sites/default/files/prone_position_in_adult_critical_care_2019.pdf

CONTINUED

CONTINUED

References continued

- Parker, A., Sricharoenchai, T. & Needham, D.M. (2013). Early rehabilitation in the intensive care unit: Preventing physical and mental health impairments. *Current Physical Medicine and Rehabilitation Reports, 1*(4), 307-314.
- Quick, T., & Brown, H. (2020). A Commentary on Prone Positioning Plexopathy during COVID 19 Pandemic. The Transient Journal of Trauma, Orthopaedics and the Coronavirus. Retrieved from https://www.boa.ac.uk/policy-engagement/journal-of-trauma-orthopaedics/journal-of-trauma-orthopaedics-and-coronavirus/a-commentary-on-prone-position-plexopathy.html
- Schweickert, W.D., Pohlman, M.C., Pohlman, A.S., Nigos, C., Pawlik, A.J., Esbrook, C.L. … & Kress, J.P. (2009). Early physical and occupational therapy in mechanically ventilated, critically ill patients: A randomized controlled trial. *Lancet, 373*, 1874-1882.
- Wilcox, M.E., Brummel, N.E., Archer, K., Ely, E.W., Jackson, J.C., & Hopkins, R.O. (2013). Cognitive dysfunction in ICU patients: Risk factors, predictors, and rehabilitation interventions. *Critical Care Medicine, 41*, S81-S98.
- World Health Organization (2020). Infection prevention and control during health care when novel coronavirus infection is suspected. Retrieved from: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125