Physiotherapy in the FMC ICU: Some Context

- ARDS is not a new phenomenon in ICU, it can occur from many different sources (e.g. sepsis, trauma) [1]
  - However, COVID-19 poses unique challenges related to anticipated number of ARDS patients and transmissibility
- Currently ~30 ICU beds, preparing for surge capacity of ~150 beds
- Modelling suggests probable scenario of 232 AB COVID-19 cases needing ICU care in late May-June [2]
- Patients who survive ARDS at high risk for impaired physical function, PTSD and depression [3]
- Major focus on early progressive mobility to improve patient outcomes [4]

Case Study: Initial Stage

- Patient in their 40s, admitted with severe respiratory failure (ARDS) secondary to COVID-19
  - Total of 22 days spent in ICU
- During initial stage of ICU stay, patient was consistently:
  - Intubated and fully dependent on ventilator
  - Sedated
  - Chemically paralyzed on neuromuscular blockers
  - Proned 5 times to improve ventilation (16 hours prone/8 hours supine)
- Developed an acute kidney injury, requiring continuous dialysis
PT Involvement: Initial Stage

- Evidence for chest PT in ARDS sparse
  - Ineffective cough (due to paralytics) may benefit from PT involvement to facilitate secretion clearance
- Primarily an issue of inflammation and pulmonary edema rather than secretion production
- Main role is related to preventing secondary complications
  - Maintaining ROM
  - Positioning
  - Monitoring for appropriateness for mobilization
- Heavily reliant on input and collaboration with interprofessional team (RN, RT, MDs) at this stage

Case Study: Gradual Improvements

- After approximately 10 days intubated, ventilated, sedated and chemically paralyzed, patient began gradually showing signs of improvement, including:
  - No longer requiring proning
  - Decreased O2 requirements, improvement seen on blood gasses and chest x-rays
  - Improved tolerance for neuromuscular blockade and sedation weaning
  - Improved global organ function, no longer requiring continuous dialysis
- Not linear, days of slow improvement with episodes of decline
PT Involvement: Initiating Early Mobility

- Mobility is the primary treatment approach to address deconditioning and optimize respiratory status
- Monitoring patient status from beginning allowed for identification of improvements to help make informed decision about mobility
- Decision to initiate early mobility required extensive discussion with team to confirm that we were pursuing the same goals
- Consistently evaluating the risks vs. benefits of pushing patient

PT Involvement: Mobility Progression

First session: positioned patient upright in bed
- Done to assess tolerance for upright positioning
  - Increased respiratory rate, brief desaturation

Second session: positioned in bed-chair, sat forward to dangle with 2 person max assist
- Improved tolerance, still too sedated to progress

Third session: transferred to sitting at edge of bed with 2 person assist
- Tolerated approximately 10 minute dangle, helped make a case for extubation

Fourth session (after extubation): patient stood, transferred to/from chair with 1-2 person assist
- Tolerated well

Guiding Principles

Constantly evaluate risks vs. benefits
- ARDS patients are very fragile; however, not mobilizing has risks too!

Be more conservative
- In an effort to conserve PPE and limit contact unless absolutely necessary

Collaborate, collaborate, collaborate!
- Share assessment findings, work with other HCPs to plan care

Be flexible
- May involve completing tasks outside of typical role to optimize efficiency

Caseload management: Don’t forget about non-COVID patients
- Plan to see COVID-positive patients at the end of the day

Focus on the patient, not just the COVID status
- While considerations around COVID are pertinent, important to maintain a high standard of care to optimize outcomes for these patients
Citations


