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**Pressure Injury as Insidious Comorbidity in Ventilator-Dependent Respiratory Failure (VDRF) Secondary to COVID-19: A Case Report**

Carlos Rodriguez (Sunrise Health GME Consortium / HCA Healthcare), Karyn Rae Doddy, Napatkamon Ayutyanont

**Research Objectives:** To highlight opportunities to decrease adverse outcomes in the acute management of COVID-19 infection.

**Design:** Descriptive single-subject study.

**Setting:** Inpatient/Acute rehabilitation.

**Participants:** A 47-year-old female with Ventilator-Dependent Respiratory Failure (VDRF) secondary to COVID-19.

**Interventions:** In the ED, Patient was started on antibiotics (azithromycin, ceftriaxone), nebulizer treatments, intravenous fluids, and intramuscular corticosteroids (methylprednisolone).

On hospital admission, she was initiated on antiviral Remdesivir and received 1 unit of convalescent plasma. Self-proning was encouraged, yet Patient required progressive increase in oxygen (O2) supplementation. She was intubated from Hospital Day (HD) 4 to 7. Wound care assessments began on HD10; wounds to low back and bilateral buttocks were noted. By HD15, O2 requirements were further weaned and Patient was transferred to Acute Inpatient Rehab.

On Rehab admission, Patient had Leukocytosis and wounds noted as "Untstageable". Antibiotic coverage was increased (Cefepime). By HD28/Rehab Day (RD) 13, wound culture was positive, and antibiotic regimen was further supplemented (Metronidazole, Fluconazole, Daptomycin).

MRI thoracic spine and pelvis demonstrated "necrotizing soft-tissue infection". Surgical debridement occurred HD31/RD16 with subsequent anemia, requiring transfusion. She underwent additional surgical debride- ment on HD38/RD23 and was returned to the Acute floors. She was discharged to home with outpatient wound care on HD53.

**Main Outcome Measures:** Wound size (area).

**Results:** Wound size: Hospital Day (HD) 10: 284.39cm²; HD16/Rehab Day (RD) 1: 698.6cm²; HD34/RD19: 265.66; HD39:747.2cm²; HD51: Area = 992.80cm².

Area, Pre-Rehab (HD16-HD10): (+) 414.2cm²; ΔArea, Rehab (HD34/RD19-HD16/RD1): (-) 439.94; ΔArea, Post-Rehab (HD51-HD34): (+) 727.14.

**Conclusions:** Inpatient Rehabilitation practices may help ameliorate pressure injury in cases of VDRF secondary to COVID-19 infection. Further study is warranted on the potential integration of such practices in this patient population, as a preventative measure in the Acute and/or Critical care settings.

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**Keywords:** Wounds and Injuries, Rehabilitation, COVID-19, Respiratory Insufficiency, Critical Care

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**Late Breaking Research Poster 1828749**

Effect of Inspiratory Muscles Training With Threshold Loading Device in Patients With Chronic Obstructive Pulmonary Disease

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**Research Objectives:** To find out the changes of inspiratory muscle strength by manometer, to assess the changes of exercise tolerance by 6MWT, to assess the changes of FEV1 and FVC with the spirometer and to assess the quality of life by COPD assessment test at 0, 2nd, 4th and 6th week in patients with COPD treated with the inspiratory muscles training using threshold loading device.

**Design:** Hospital-based quasi-experimental study.

**Setting:** The study was conducted at hospitalized care.

**Participants:** Participants (N=30) were diagnosed with COPD by attending physicians, age between 40 and 80, and both male and female by convenience sampling method.

**Interventions:** The participants received inspiratory muscles training (IMT) with a threshold loading device.

**Main Outcome Measures:** The main outcome measures were (1) maximum inspiratory pressure, (2) Forced vital capacity (FVC) and Forced expiratory volume in one second (FEV1), (3) the 6-minute walk test (6-MWT), and (4) the COPD Assessment Test (CAT) questionnaire.

**Results:** The baseline maximal inspiratory pressure was 69.9 cmH2O and 16.7±±5.8 cmH2O (Mean±SD) at the sixth week, and the p-value was 0.01. At the baseline assessment, FEV1 and FVC were 1.3 L and 1.8 L and 0.68±±0.18 (Mean±SD) and 0.46±±0.26 (Mean±SD) at the sixth week, and p-value were 0.01 and 0.007. The 6-MWT was 249 meters and 25±±8.4 (Mean±SD) at the sixth week, and the p-value was 0.008. The CAT score was 11 before intervention and -3.9±±2.2 (Mean±SD) at the sixth week, and the p-value was 0.01.

**Conclusions:** There were improvements in inspiratory pressure, lung functions, exercise tolerance, and quality of life both clinically and statistically by the IMT with the threshold loading device in this study. Therefore, inspiratory muscles training with a threshold loading device should be used as the routine treatment in patients with COPD.

**Author(s) Disclosures:** There are no conflicts and disclosures.

**Keywords:** Chronic Obstructive Pulmonary Disease, Inspiratory Muscle Training, Threshold Loading Device, Maximal Inspiratory Pressure, 6-Minute Walk Test

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**Late Breaking Research Poster 1828748**

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Carlos Rodriguez (Sunrise Health GME Consortium / HCA Healthcare), Karyn Rae Doddy, Napatkamon Ayutyanont

**Research Objectives:** To highlight opportunities to decrease adverse outcomes in the acute management of COVID-19 infection.

**Design:** Descriptive single-subject study.

**Setting:** Inpatient/Acute rehabilitation.

**Participants:** A 13-year-old female with paramyotonia congenita. Patient had a 4 month history of increasing low back pain and bilateral hip pain secondary to diagnosis of paramyotonia congenita with decreased hip and back range of motion due to increased pain and muscle tone.

**Interventions:** Aquatic Therapy in heated pool (99°F, 37.2°C)
- Targeted application of ultrasound to painful areas greater reduced pain, for up to 13 days.
- Use of goniometry, as a standardized measurement tool, was greater influenced to the patient’s level of reported pain
- Energy conservation techniques further reduced the patient’s report of pain at home and school.

**Conclusions:** Physical therapy intervention may be an effective treatment option in reducing pain in a 13-year-old girl with PMC. Treatment modalities utilizing the application of heat may have decreased pain for several days at a time, and deeper heating options appear to yield greater effectiveness at reducing pain for longer periods of time.

**Author(s) Disclosures:** All authors declare that there are no conflicts of interest.

**Keywords:** Paramyotonic Congenita (PMC), Physical Therapy, Rehabilitation, Genetic Disorder

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