

Research and Presentations by Johns Hopkins PM&R Faculty and Medical Students at AAPMR 2023

Pain, Functional, and Structural Improvements in Lumbosacral Radiculopathy Due to Disc Herniation After Epidural Platelet-rich-plasma Injection

Thursday, November 16, 2023

Primary Author(s)

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Case Diagnosis: 39-year-old male who presented with right sided low back pain with radiculopathy.

Case Description or Program Description: There was no inciting event. Pain was aggravated by sitting or lifting his child, and alleviated by lying supine. Initial MRI showed right L5-S1 disc protrusion contacting right S1 and possible right L5 nerve roots in lateral recess and neural foramen. He had since completed conservative treatments, including ibuprofen, diclofenac gel, physical therapy, and home exercise program, which provided no sustainable relief. Exam was significant for increased symptoms with trunk flexion, weakness noted in right S1 myotomal distribution, as well as positive slump sit and crossed slump sit tests.

Setting: Outpatient Sports and Pain Clinical Practice

Assessment/Results: Patient underwent right L5-S1 transforaminal and right S1 dorsal sacral transforaminal steroid injections, in addition to continued physical therapy. At 6 months, the patient noted about 60% improvement but continued to have right sided low back and radicular pain. Repeat MRI showed increase in size of the disc herniation. At 8 months post epidural steroid injection, patient underwent transforaminal epidural leukocyte-rich-platelet rich plasma (PRP) injection to the same levels. At 3 months post PRP injection, patient noted 3/10 intermittent and localized right sided low back pain with complete resolution in radicular pain. Follow up MRI showed interval decrease in the size of prior right sided L5-S1 disc herniation.

Discussion (relevance): This case report shows that both corticosteroid and PRP epidural injections provide pain relief. However, PRP also appeared to additionally provide structural improvement, or at the least did not worsen the structural root cause of pain: the patient's disc herniation.

Conclusions: More research should be done to explore the effects of epidural PRP injection for lumbosacral radiculopathy due to disc herniation, providing potentially greater positive outcomes with decreased side effects as compared to corticosteroid epidural injections.

8% Topical Capsaicin Patch Placement to Treat post-covid-19 Neuropathic Pain: A Case Report

Thursday, November 16, 2023, 12:45 PM – 2:15 PM CT

Primary Author(s)

- Robert O. Emeh

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Washington, District of Columbia

Case Diagnosis: 58-year-old female with Post-Covid-19 Neuropathy

Case Description or Program Description: The patient came into the PM&R clinic with a history of painful Post-Covid-19 Neuropathy. The pain was present in both feet in a non-dermatomal distribution.. She was previously unsuccessfully treated with gabapentin, pregabalin, amitriptyline and duloxetine. The decision was made to trial an 8% topical capsaicin patch for her symptoms. The patch was applied to the marked area for 30 minutes and was tolerated well.

Setting: John Hopkins Bayview Medical Center

Assessment/Results: Prior to the capsaicin patch placement, the patient stated her foot pain ranged from a 5-9 out of 10 in intensity, and characterized it as a “sharp ache”. The morning after the procedure, the patient felt significant relief of her neuropathic pain, stating the pain became a 1/10. The patient stated the pain has stayed at a 1/10 between her first appointment and second appointment 4 months later. The patient is now able to complete all of her daily activities. At the second appointment, the patient received another capsaicin patch placement, and will continue to follow up.

Discussion (relevance): The evaluation of the therapeutic properties of topical capsaicin as an efficient means of relieving pain in patients with Post-Covid-19 neuropathy is a topic of general interest. As evidenced by clinical improvements in pain status, walking, working, sleeping, and involvement in leisure activities in patients with peripheral neuropathy, a vast body of research has established that capsaicin is effective in lowering pain in patients with diabetic peripheral neuropathy and post-herpetic neuralgia. This case demonstrates that it may have some utility in treating patients with painful Post-Covid-19 neuropathy.

Conclusions: We present a case of recalcitrant Post-Covid-19 neuropathic pain being successfully treated with an 8% topical capsaicin patch placement. This case highlights the value of utilizing capsaicin as a therapeutic to reduce the severity of neuropathic pain.

Spasticity Practice Guidelines for Physiatrists: The Latest in Assessing, Diagnosis, and Treating Spasticity in Adults and Children

Thursday, November 16, 2023, 3:45 PM – 5:00 PM CT

Location: CC The Great Hall B

Faculty: Preeti Raghavan, M.B.B.S.

Clinical practice guidance provides evidence-based and/or consensus-based recommendations for current assessment, diagnosis, and treatment in specific clinical areas. Until now, PM&R has not developed clinical practice guidance as a field; PM&R guidance has been incorporated into other specialty/organization's development of practice guidance. In 2021, the Academy's Board of Governors approved the Evidence, Quality and Practice Committee's recommendation to develop specialty practice guidance specific to PM&R.

In 2022, the Academy is developing one practice guidance on spasticity. Beginning in 2023, the intent is to develop practice guidance in two clinical areas. This session will provide education on the evidence and consensus-based recommendations in the first AAPM&R developed specialty practice guidance for spasticity for the adult and pediatric populations. The session will briefly describe the methodological process the Academy used and will use in the future to develop practice guidance for PM&R. The session will then provide in-depth education on the outcome of the multi-disciplinary evidence-based and/or consensus-based recommendations on the assessment, diagnosis and treatment of spasticity. It will also describe tools and resources that can be used to help support clinicians in the direct patient care of spasticity. Lastly, the session will provide an overview of how the Academy will determine its next areas of practice guidance development and explain how membership can get involved in the process.

Learning Objectives:

- Recognize spasticity in a timely manner in individuals with neurologic/neuromuscular issues.
- Understand the association and prevalence of spasticity associated with neurologic/neuromuscular issues.
- Identify the key considerations and barriers to care for patients with spasticity.
- Become familiar with the therapeutic options, pharmaceutical and nonpharmaceutical, for patients with spasticity.

Diagnostic and Interventional ultrasonography for common entrapment neuropathies of the upper extremity

Thursday, November 16, 2023, 5:15 PM – 6:45 PM CT

Location: Learning Center in the Pavilion

Session Director(s): Mo Emam, M.D.

Faculty: Alexis Coslick, D.O., M.S.

High resolution ultrasonography (US) facilitates visualization of peripheral nerves including individual nerve fascicles in cases of peripheral entrapment syndromes. US has become a valuable tool for diagnosis and management of these patients as it helps depicting changes in the nerve's shape and echo-texture, and may reveal causes of nerve compression when structural abnormalities or space-occupying lesions are present.

In this hands-on session, participants will learn about sonographic evaluation of common upper extremity nerve entrapment syndromes. This includes anatomic nerve locations, common entrapment sites, and common morphological changes of entrapment neuropathies. Participants will also learn about interventional techniques that maybe helpful in management.

Why is this lab needed: Physiatrists routinely care for patients with potential compression neuropathies commonly involving the upper extremity. In addition to the utility of electrodiagnostic tests, US has become a valuable diagnostic tool for morphological evaluation of upper extremity nerves and assessing for possible etiologies such as structural abnormalities or space-occupying lesions are present. The real time nature of US enables Physiatrists to perform dynamic assessments to assess for positional entrapments, and can also facilitate guided therapeutic interventions to improve patient-care outcome. Participants will develop skills in diagnostic and interventional US as applicable to common entrapment neuropathies in the upper extremity. Hands-on training will be faculty guided.

Lab Outline/Format: After a brief presentation, participants will be able to rotate through four different stations that will provide faculty demonstration, hands-on practice to evaluate common entrapment neuropathies of the upper extremity and interventional techniques to treat these conditions.

Learning Objectives:

- Gain skills in sonographic evaluation of upper extremity anatomic nerve locations and common entrapment sites.
- Recognize common morphological changes of entrapment neuropathies of the upper extremity.
- Learn about ultrasound guided interventional techniques that maybe helpful in management of common entrapment neuropathies of the upper extremity.

A Cross-sectional Survey of Cancer Rehabilitation Physiatrists Across the United States Regarding Outcome Measure Collection

Thursday, November 16, 2023, 5:00 PM – 7:00 PM CT

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- Jessica P. Engle, D.O., Assistant Professor of Physical Medicine and Rehabilitation, John Hopkins Medicine, Washington, District of Columbia
- Jessica T. Cheng, MD, Assistant Professor, City of Hope Orange County Lennar Foundation Cancer Center, Irvine, California

Objective: To understand current practice of outcome measure collection in cancer rehabilitation physiatry practices across the United States and interest in collecting common outcome measures for a common database

Design: Descriptive cross-sectional survey collected from October 21, 2022 to November 4, 2022

Participants: Members of the AAPM&R Cancer Rehabilitation Physician Consortium (CRPC)

Main Outcome Measures: Identification of common outcome measures and interest in collecting common outcome measures

Results: Twenty-four cancer rehabilitation physicians representing 22 institutions across the United States responded to the survey. Seventeen (71%) respondents were actively collecting metrics. Practice setting was primarily tertiary care hospital (n=18, 75%), outpatient (n=18, 75%), and with Epic as the electronic medical record (EMR) (n=16, 66%). The most common patient populations were breast cancer (n=19) and head and neck cancer (n=11). Regarding workflow, outcome measures were collected before (n=11, 64%) or during (n=7, 41%) the clinic visit. Common objective physical function metrics collected were grip strength (n=10), 30 second sit-to-stand (n=9), 6-minute walk test (n=5), timed up and go (n=5), and bioimpedance spectroscopy (n=5). Common patient-reported outcomes collected were Patient-Reported Outcomes Measurement Information System (PROMIS) Physical Function Short Form (n=7), PROMIS Cancer Function Brief 3D Profile (n=6), and Edmonton Symptom Assessment Scale (n=6). Twenty-two (92%) respondents from 20 (91%) institutions were interested in collecting common outcome measures to contribute to a cancer rehabilitation database. Barriers to outcome measure collection were inadequate staff to obtain measures (n=14, 58%) and limited EMR resources (n=7, 29%).

Conclusions: Cancer rehabilitation physiatrists in the United States collect diverse outcome measures in varied practice settings. Interest in collecting common outcome measures for a database exists. However, consensus on evidence-based metrics and overcoming implementation barriers are crucial before database development.

Essential Updates in the Physiatric Management of Post COVID Conditions: Fatigue, Cardiovascular, Pulmonary & Pain Disorders

Friday, November 17, 2023, 9:15 AM – 10:30 AM CT

Location: CC 225-227

Faculty: Alba Azola, M.D.

This session will provide updates on the central role of Physiatrists and the American Academy of Physical Medicine and Rehabilitation (AAPM&R) in defining and guiding the care of individuals with functional limitations due to Post-Acute Sequelae of COVID-19 (PASC). Physiatrists are essential physicians to manage the rehabilitation of individuals with PASC – a chronic disabling condition affecting up to 1/3rd of individuals who get COVID-19. This session will provide updates to the essential knowledge needed by Physiatrists to deliver excellence in care to individuals with PASC-related fatigue, cardiovascular disorders, breathing disorders and pain. Attendees will be engaged through a panel discussion, case examples and questions / answers. This session will summarize the initial work completed by the AAPM&R PASC Collaborative and provide detailed updates on our understanding of PASC pathology and the specific management of PASC symptoms and system disorders. As, for many, PASC becomes a chronic (3+ years) condition, advances in understanding opens new therapeutic opportunities to individuals with persistent PASC. Over the past year, the AAPM&R PASC collaborative has advanced its knowledge and understanding of post COVID conditions and this session is focused on updating Physiatrists on these advances in evaluation and management of PASC. Individuals with PASC often have a protracted course with persistent limitations in vocational and avocational activity tolerance with significant negative impact on quality of life. This session will reinforce the essential knowledge required by Physiatrists in the short and long term management of individuals with PASC and provide the latest updates in management.

Learning Objectives:

- Discuss the presentation of common PASC organ / system specific dysfunction - Fatigue, Cardiovascular, Pulmonary and Pain Disorders
- Conduct a thorough evaluation of common PASC organ / system based disabilities - Fatigue, Cardiovascular, Pulmonary and Pain Disorders
- Understand the advances in management and outcomes monitoring of common PASC organ / system based disabilities - Fatigue, Cardiovascular, Pulmonary and Pain Disorders

Essential Updates in the Psychiatric Management of Post COVID Conditions: Autonomic, Neurologic, Cognitive and Pediatric Disorders

Friday, November 17, 2023, 1:45 PM – 3:00 PM CT

Location: CC 225-227

Faculty: Amanda Morrow, M.D., and Laura Malone, M.D., Ph.D.

This session will provide updates on the central role of Psychiatrists and the American Academy of Physical Medicine and Rehabilitation (AAPM&R) in defining and guiding the care of individuals with functional limitations due to Post-Acute Sequelae of COVID-19 (PASC). Psychiatrists are essential physicians to manage the rehabilitation of individuals with PASC – a chronic disabling condition affecting up to 1/3rd of individuals who get COVID-19. This session will provide updates to the essential knowledge needed by Psychiatrists to deliver excellence in care to individuals with PASC-related autonomic, neurologic, cognitive and pediatric disorders. Attendees will be engaged through a panel discussion, case examples and questions / answers. This session will summarize the initial work completed by the AAPM&R PASC Collaborative and provide detailed updates on our understanding of PASC pathology and the specific management of PASC symptoms and system disorders. As, for many, PASC becomes a chronic (3+ years) condition, advances in understanding opens new therapeutic opportunities to individuals with persistent PASC. Over the past year, the AAPM&R PASC collaborative has advanced its knowledge and understanding of post COVID conditions and this session is focused on updating Psychiatrists on these advances in evaluation and management of PASC. Individuals with PASC often have a protracted course with persistent limitations in vocational and avocational activity tolerance with significant negative impact on quality of life. This session will reinforce the essential knowledge required by Psychiatrists in the short and long term management of individuals with PASC and provide the latest updates in management.

Learning Objectives:

- Discuss the presentation of common PASC organ / system specific dysfunction - Autonomic, Neurologic, Cognitive and Pediatric Disorders
- Conduct a thorough evaluation of common PASC organ / system based disabilities - Autonomic, Neurologic, Cognitive and Pediatric Disorders
- Understand the advances in management and outcomes monitoring of common PASC organ / system based disabilities - Autonomic, Neurologic, Cognitive and Pediatric Disorders

Stroke Recovery and Rehabilitation: Debating the Controversies

Friday, November 17, 2023, 3:15 PM – 4:30 PM CT

Location: CC The Great Hall B

Faculty: Preeti Raghavan, M.B.B.S.

Session Description: Stroke recovery and rehabilitation is evolving rapidly due to growing numbers of clinical trials and expanding therapeutic options. As a consequence, practitioners face difficult decisions when choosing among various therapies and prioritizing resource allocation. Among evolving topics are the use of virtual reality therapy, mirror therapy, robot-assisted rehabilitation, vagal nerve stimulation, non-invasive brain stimulation and other approaches. This session will include a case-based debate among experts regarding the best approach to facilitate stroke recovery and optimize rehabilitation for a range of stroke survivors with varying impairments and needs.

Why is this session needed?: Physicians caring for stroke survivors have a growing array of treatment options, but clinical research data is of varying quality and may be difficult to interpret. Clinical guidelines for the application of these treatments often lag behind the latest evidence. Rapid evolution of stroke recovery rehabilitation techniques, such as recent reports of remote ischemic conditioning and multiple studies of robotics and virtual reality require frequent changes in practice. This session will incorporate expertise from a panel of experienced stroke rehabilitation experts with a variety of viewpoints to help participants synthesize their own approach to this area of rehabilitation care.

Learning Objectives:

- List the major options for evidence-based stroke recovery and rehabilitation therapies
- Select from among the stroke recovery and rehabilitation therapies to choose the most appropriate option(s) for each patient.
- Identify the advantages, disadvantages, risks and benefits of a variety of stroke recovery and rehabilitation therapies.

Making Sense of Muscle Wasting

Saturday, November 18, 2023, 9:15 AM – 10:30 AM CT

Location: CC 220-222

Session Director: Jessica Engle, D.O.

We will explore the distinct types of muscle wasting disorders commonly seen by physiatrists., including underlying biology and diagnostic classification. Then we will discuss how to develop rehabilitative programs for muscle wasting disorders, with specific focus on the cancer population. Finally, we will have a panel discussion, including representation from psychiatry, dietary medicine, and exercise physiology. The panel will provide multi-disciplinary perspectives on better targeting treatments for patients with muscle wasting disorders.

Muscle wasting disorders affect a wide range of patients who require rehabilitation services, and occur secondary to chronic illness like cancer and organ failure, but also stroke and spinal cord injury. A number of terms have been used to describe muscle wasting, including cachexia, sarcopenia, and atrophy. However, from a rehabilitation perspective, there is no consensus on the treatment-based relevance of these distinct terms. Frequently, concepts are confused for each other, which impacts the potential specificity of rehabilitative interventions. Thus, further education on muscle wasting disorders is needed from a psychiatry perspective. In 2022, there was a presentation titled “Sarcopenia in cancer: the need for collaboration between medical nutrition and rehabilitation” led by Hanna (Hunter) Oh et al. There was immediate interest to continue this timely conversation around the critical role of psychiatry in sarcopenia, frailty, and cachexia research. Our session proposal this year brings together experts actively tackling the clinical challenges of diagnosing and treating muscle wasting. In this proposal, we will explore avenues for psychiatry leaders to develop a consensus statement and a pragmatic treatment algorithm.

Learning Objectives:

- Compare and contrast existing classification of muscle wasting conditions (frailty, cachexia, sarcopenia)
- Define the interdisciplinary team for assessment and treatment of muscle wasting, highlighting the specific role of psychiatry in muscle wasting management.
- Describe how biology, therapeutics, and rehabilitation have different implications for assessment and treatment of muscle wasting.
- Identify the most clinically relevant factors in muscle wasting diagnosis and treatment that can be easily implemented in the rehabilitation community.