Multimodal Treatment of Bilateral Anterior Elbow Pain in a Patient with Chronic Tetraplegia

DIMAS, GREGORY [1,2]; COFFEY, PEGGY [1]; STEIN, BRADLEY PHARM.D. [1]; BURGE, TINA PHARM.D. [1]

1 JAMES A. HALEY VETERANS' HOSPITAL, TAMPA, FLORIDA 2 MORSANI COLLEGE OF MEDICINE, UNIVERSITY OF SOUTH FLORIDA, TAMPA, FLORIDA

OBJECTIVE

To report a case of multi-modal pain treatment in a patient with chronic tetraplegia.

BACKGROUND

Patient is a 64-year-old African American male with history of chronic CS AIS A tetraplegia secondary to a motor vehicle crash (MVC) in 2001 who resides in a VA long term care facility.

Found to have complete spinal cord transection during cervical spinal surgery. Bilateral anterior elbow pain (AEP) with pins and needles sensation began four months after onset of tetraplegia. Pain continued and remained very bothersome.

Following administration to a VA long term care facility, neurogenic etiology of AEP was felt likely due to character and symmetry.

He began different medications in varying doses and intervals of administration, including duloxetine, pregabalin, and topical diclofenac non-steroidal anti-inflammatory gel. He then began regular active bilateral upper limb exercycle (primarily shoulders) under kinesiotherapist guidance.

Clinical Pharmacy rendered in-depth analysis of pain scores over five years' duration from monthly medication review notes, including high pain range, low pain range, mode, and average. Please refer to illustrations. Although he reported subjective improvement of AEP from his regimen, a significant reduction of bilateral AEP scores was not observed despite the combined interventions.

DESIGN

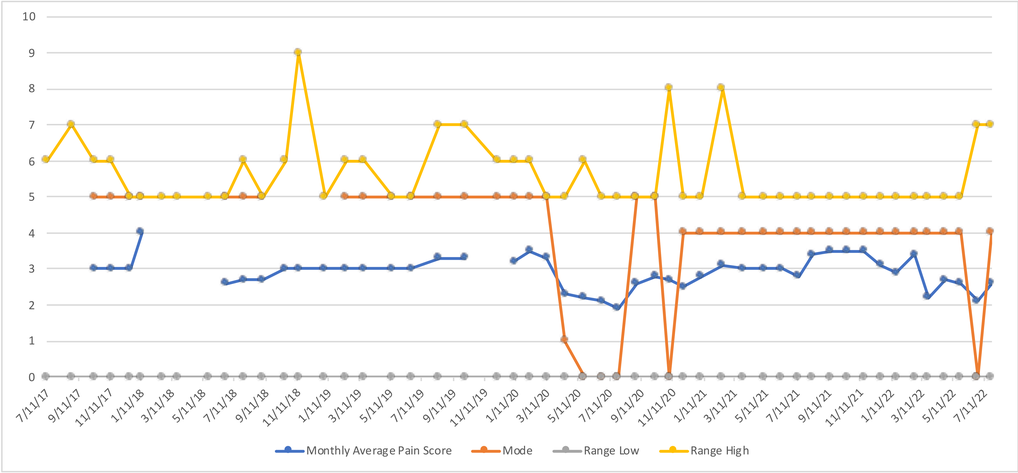
Case Study

METHODS

Case Description

SUPPORT

This material is the result of work supported with resources and the use of facilities at the James A. Haley Veterans' Hospital. This case report is unfunded.



CONCLUSION AND CLINICAL RELEVANCE

Different classification schemes help define etiology of pain after spinal cord injury (SCI). Two etiologies are nociceptive and neuropathic. Although prevalence of chronic neuropathic pain after SCI is lower (approximately 40%) than nociceptive pain, it generally is rated more severe.[2]

Some medications have been found to treat nociceptive pain better than neuropathic and vice versa. Pregabalin is believed to mitigate pain by inhibiting release of excitatory neurotransmitters. Dual serotonin and norepinephrine reuptake inhibitors are a recent addition of antidepressant use for chronic pain.[1] Oral medications helped but our patient received additional pain reduction from topical diclofenac gel and active exercise.

Anesthesiology successfully has shown multi-modal medical treatment (MMMT) using epidural opioids and local anesthetic reduces post-operative pain better compared to epidural opioids alone. Different types of surgeries have tried MMMT anesthesia, including orthopedics, urological, and bariatric. Optimal efficacy of combined interventions certainly deserves future study in SCI pain.

LEARNING OBJECTIVES

1. Explain proposed mechanism of action of meds used to treat neuropathic pain.
2. Topical non-steroidal anti-inflammatory medications may be tried.
3. Exercise may be combined with medications.

KEYWORDS

SPINAL CORD INJURY, NEUROGENIC, NICOCEPTIVE, NUMERIC RATING SCALE, TOPICAL, EXERCISE

Date	Monthly Average Pain Score	Mode	Range Low	Range High
7/25/22	2.6	4	0	7
6/27/22	2.1	0	0	7
5/26/22	2.6	4	0	5
4/25/22	2.7	4	0	5
3/24/22	2.2	4	0	5
2/25/22	3.4	4	0	5
1/21/22	2.9	4	0	5
12/22/21	3.1	4	0	5
11/19/21	3.5	4	0	5
10/18/21	3.5	4	0	5
9/14/21	3.5	4	0	5
8/11/21	3.4	4	0	5
7/14/21	2.8	4	0	5
6/11/21	3	4	0	5
5/7/21	3	4	0	5
3/29/21	3	4	0	5
2/16/21	3.1	4	0	8
1/6/21	2.8	4	0	5
12/2/20	2.5	4	0	5
11/5/20	2.7	0	0	8
10/8/20	2.8	5	0	5
9/1/20	2.6	5	0	5
7/28/20	1.9	0	0	5
6/26/20	2.1	0	0	5
5/22/20	2.2	0	0	6
4/16/20	2.3	1	0	5
3/11/20	3.3	5	0	5
2/7/20	3.5	5	0	6
1/8/20	3.2	5	0	6
12/6/19		5	0	6
10/4/19	3.3	5	0	7
8/14/19	3.3	5	0	7
6/21/19	3	5	0	5
5/15/19	3	5	0	5
3/22/19	3	5	0	6
2/14/19	3	5	0	6
1/4/19	3		0	5
11/13/18	3		0	9
10/18/18	3		0	6
9/4/18	2.7	5	0	5
7/30/18	2.7	5	0	6
6/25/18	2.6	5	0	5
5/23/18			0	5
3/23/18			0	5
2/20/18			0	5
1/12/18	4	5	0	5
12/21/17	3	5	0	5
11/14/17	3	5	0	6
10/11/17	3	5	0	6
8/29/17			0	7
7/11/17			0	6

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