ISSN: 2476-5279; International Journal of Musculoskeletal Pain Prevention. 2022;7(1): 622-626.

Care and Management of Pain in Patients with Musculoskeletal Pain during the Covid-19 Epidemic

ARTICLEINFO

Article Type
Editorial

Authors
Monireh Motaqi[1] *PhD*
Mahsa Afran[2] *BS*
Ali Ghanjal[3*] *PhD*

How to cite this article

Motaqi M,. Afran M., Ghanjal A. Care and Management of Pain in Patients with Musculoskeletal Pain during the Covid-19 Epidemic. IJMPP. 2022; 7(1): 622-626.

[1] Physiotherapy Research Center, School of Rehabilitation, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
[2] Roya Physiotherapy Clinic, Tehran, Iran.
[3] Health Management Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran.

** Correspondence*
Address: Health Management Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran.
Tel: (+98) 21 88057022
Fax: (+98) 21 88057022
P.O.Box: 9787556636
Email: aghanjal@yahoo.com

Article History
Received: Nov 3, 2021
Accepted: Dec 3, 2021
ePublished: Dec 30, 2021

Pain Management in Covid-19 Epidemic

Pain is an unpleasant phenomenon and processwhich its management in both outpatient and inpatient settings requires a multidisciplinary approach including medical, physical, and psychological procedures [1]. Although, pain control is a fundamental human right-Covid-19 coronavirus epidemic has closed many pain treatment clinics [2]. The disease has significantly affected the level of public health of human communities and hospital facilities to provide medical services [3].

Musculoskeletal pain is one of the most common complaints in health systems of countries which is the reason why many people go to medical centers every day. The main cause of these pains is related to damage to soft tissues such as muscles, fascia, ligaments, tendons and other components of soft tissue in the form of stretching or partial rupture in varied degrees that can cause inflammation, pain, tissue dysfunction. In physical medicine and rehabilitation, various methods are used to manage pain by physiotherapists in acute and chronic conditions [3]. Acute pain usually occurs as a result of sudden pressure that cause affected tissues and dysfunction. Chronic pain also usually occurs as a result of incomplete treatment of tissue or joint injuries. If these problems are not corrected, neuropathic pain may follow. Therefore, care and management of pain is important, especially during the Covid-19 epidemic because of reduced access to hospitals and medical resources [4]. Furthermore, stress, anxiety, and isolation-related problems caused by this epidemic may also worsen the painful symptoms of Musculoskeletal Disorders (MSDs) and lead to decreased performance in the suffered people.It has been argued that untreated chronic pain can exacerbate depression in about 50% of patients which may lead to suicide in 35% of affected cases [2]. Pain related to the musculoskeletal system is either related to previous disorders and problems of the system or is a complication of the disease such as myalgia, arthralgia, muscle fatigue, and headache.

Care and management of acute musculoskeletal pain during the Covid-19 epidemic has been discussed as following:

Using the Resting the pain site, Ice using, Compressing the pain site,and Elevating the pain site (RICE) strategy:

[DOR: 20.1001.1.24765279.2022.7.1.6.5]
[DOI: 10.52547/ijmpp.7.1.1]

In the early stages of injury, damage to tissues and peripheral arteries causes acute inflammatory reactions with tissue swelling and severe pain. Management of this problem mainly involves reducing inflammation and swelling of the tissue by Resting the pain site, Ice using, Compressing the pain site, and Elevating the pain site (RICE) for 72 hours [5-6]. Cold therapy (using ice, cold water compresses, and cooling packs) is usually substituted for heat therapy at this stage, as it can improve the vascular condition of the tissueand reduce inflammation and pain [7].

Use of protective devices and techniques: The site of injury can be protected by means such as orthoses such as corsets, braces, splints and neck clasps [8] or kinesiotype tapes [9]. Reports have largely shown that kinesiotype tapes can perform functions such as providing relative stability to damaged tissues and joints, giving rest to the involved soft tissues,pain control, and swelling reduction by improving the function of the lymphatic system and fascia of the affected site [9-10].

Modalities: Modalities such as Infera Red (IR) [11], Transcutaneous Electrical Nerve Stimulation (TENS) [12], Inter Feren Tial (IFT) [13], Ultra Sound (US) [14], Laser [15] can be used. An easy and practical way to reduce pain is to use an electrical skin stimulator (Tens). TENS devices use different current and frequency parameters to stimulate sensory and peripheral nerves. When TENS applied to the pain site, these devices stimulate Aα fibers to reduce pain through gait control theory. Studies have shown that TENS can reduce pain successfully [12].

Exercises: In the first days after the injury, the exercises are first applied in the form of Passive Range Of Motion movements at the site of injury (PROM). These gentle movements can maintain the range of motion of the joint, prevent stiffness, and increase the peripheral arteries. Stretching exercises can then be performed gradually until the damaged soft tissue retains its elasticity. If pain can be reduced by performing PROM exercises, exercises with active assistive range of motion and active range of motion exercises can be performed over time to strengthen the muscle tissue around the affected area. Finally, strengthening exercises can be used in its various forms including assistive and resistive according to the patient's condition [16].

Medication: Anti-inflammatory drugs and muscle relaxantssuch as Non Steroidal Anti-Inflammatory Drugs (NSAID) can be used to reduce pain and swelling in the acute phase [17]. Steroids and opioids are not commonly used at this stage because of their effect on the immune system and its suppression. Patients who are treated with long-term opioids (mostly in chronic pain) are more prone to secondary infections, including Covid- 19 infection . Moreover, respiratory symptoms of Covid- 19 may be exacerbated in patients taking opioids because these patients are at risk for decreased respiration [18-20]. Steroids suppress the immune system even more than opioids and their use can be dangerous in high-risk patients. Steroids are associated with secondary adrenal insufficiency and altered immune response, so they should be used with caution in patients with Covid -19 [21].

If the pain persists after performing the above procedures (for 3 to 5 days) with functional limitations, imaging techniques such as X-rays should be used to confirm whether a fracture has occurred at the lesion site or not. If there is no bone lesion, US should be performed to detect significant rupture or significant soft tissue damage [22]. Many acute pains are associated with ligament rupture or muscle rupture due to intra-articular hematoma or peritoneal

[DOR: 20.1001.1.24765279.2022.7.1.6.5]
[DOI: 10.52547/ijmpp.7.1.1]

tendon) [23]. If drainage can be done in a timely manner, pain and tissue function will be significantly reduced.

People with pain syndrome for more than 6 months can achieve adequate pain control through Modalities, Exercise, and Medication which are described as follows:

Modalities: Modalities such as IR, TENS, FT [13], US [14], Laser can also be used for pains that continued more than 6 months. Studies have reported that TENS can successfully reduce chronic pain [12]. Cold and heat therapy are also simple methods to relieve chronic pain by enlarging peripheral arteries and releasing cramped muscles and fascia [24-26].

Exercises: At this stage of the injury, sports activities such as stretching exercises in the injured area, strengthening exercises to strengthen weak peripheral muscles and improve stability in the injured position. Strengthening muscles and improving stability can help reduce the pain of instability [27-28].

Medication: The main pathophysiology of pain in these injuries is caused by inflammation, so the main drugs used to treat it are COX inhibitors.These inhibitors are a relatively new class of NSAIDs that they reduce pain by limiting the formation of inflammation [29, 1]. Sensory centers in the spine and brain may also stimulate pain and cause neuropathic pain. Therefore, adequate anti-inflammatory drugs combined with morphine-like drugs such as ultrast (acetaminophen / tramadol) help reduce pain. If the pain becomes more severe which leading to numbness and paresthesia, addition of tricyclic antidepressants is recommended to reduce pain exacerbated by the brain [30].

If the pain persists even after prescribing the above procedures, the patient should be further examined. Chronic pain is usually caused by unhealed tendons and unstable joints. Ultrasound (US) can be used to diagnose such local abnormalities in damaged tissue. Today, topical injection method under US-guided procedures is used in the treatment of chronic musculoskeletal pain [31-33]. Prolotherapy that is injection of regenerative solution of dextrose solution [34-35] or Platelet-Rich Plasma (PRP) under ultrasound guide can significantly reduce chronic musculoskeletal pain [36-37].

References

1. Varrassi G, Yeam ChT, Rekatsina M, Pergolizzi JV, Zis P, Paladini A. The Expanding Role of the COX Inhibitor/Opioid Receptor Agonist Combination in the Management of Pain. Drugs. 2020;80(14):1443-1453.doi: 10.1007/s40265-020-01369-x.
2. Flaminia Coluzzi F , Marinangeli F , Pergolizzip J. Managing chronic pain patients at the time of COVID-19 pandemic. Minerva Anestesiol. 2020;86(8):797-9. doi: 10.23736/S0375-9393.20.14666-2.
3. Wang ChCh, Chao JK, Chang YH, Chou ChL, Kao ChL. Care for patients with musculoskeletal pain during the COVID-19 pandemic: Physical therapy and rehabilitation suggestions for pain management. J Chin Med Assoc. 2020; 83(9):822–824. doi: 10.1097/JCMA .0000000000000376.
4. Kumar B, Kalita J, Kumar G, Misra UK. Central poststroke pain: a review of pathophysiology and treatment. Anesth Analg. 2009;108:1645–57.
5. Weng LM, Su X, Wang XQ. Pain Symptoms in Patients with Coronavirus Disease (COVID-19): A Literature Review. J Pain Res. 2021;14:147-159.doi: 10.2147/JPR.S269206. eCollection 2021.
6. Rahman MM, Azam MG, Garcia-Ballestas E, Agrawal A, Moscote-Salazar LR, Khan RA. Letter to the Editor: Pain Management Strategy in Neurosurgical Patients During the Coronavirus Pandemic. World Neurosurg. 2020;141:577. doi: 10.1016/j.wneu. 2020.06.225.
7. Swenson C, Swärd L, Karlsson J. Cryotherapy in sports medicine. Scand J Med Sci Sports. 1996;6:193–200.
8. Wouters RM, Tsehaie J, Slijper HP, Hovius SER, Feitz P, Study Group HW, et al . Exercise Therapy in Addition to an Orthosis Reduces Pain More Than an Orthosis Alone in Patients With Thumb Base Osteoarthritis: A Propensity Score Matching Study. Arch Phys Med Rehabi. 2019;100(6):1050-1060. doi: 10.1016/j.apmr.2018.11.010. Epub 2018 Dec 11.

[DOR: 20.1001.1.24765279.2022.7.1.6.5]
[DOI: 10.52547/ijmpp.7.1.1]

9. Lu Z, Li X, Chen R, Guo Ch. Kinesio taping improves pain and function in patients with knee osteoarthritis: A meta-analysis of randomized controlled trials. Int J Surg 2018;59:27-35. doi: 10.1016/j.ijsu.2018.09.015.
10. Nelson NL. Kinesio taping for chronic low back pain: A systematic review. J Bodyw Mov Ther. 2016;20(3):672-81.doi: 10.1016/j.jbmt.2016.04.018. Epub 2016 Apr 27.
11. Polidori G, Kinne M, Mereu T, Beaumont F, Kinne M. Medical Infrared Thermography in back pain osteopathic management. Complement Ther Med. 2018;39:19-23. doi: 10.1016/j.ctim.2018.05.010.
12. Tashani O, Johnson M. Transcutaneous electrical nerve stimulation (TENS) a possible aid for pain relief in developing countries? Libyan J Med. 2009;4:62–5.
13. Fuentes JP, Olivo SA, Magee DJ, Gross DP. Effectiveness of interferential current therapy in the management of musculoskeletal pain: a systematic review and meta-analysis. Phys Ther. 2010;90(9):1219-38. doi: 10.2522/ptj.20090335.
14. Noori SA, Rasheed A, Aiyer R, Jung B, Bansal N, Chang KV et al. Therapeutic Ultrasound for Pain Management in Chronic Low Back Pain and Chronic Neck Pain: A Systematic Review. Pain Med. 2020;21(7):1482-1493. doi: 10.1093 /pm/pny287.
15. Angelova A, Ilieva EM. Effectiveness of High Intensity Laser Therapy for Reduction of Pain in Knee Osteoarthritis. Pain Res Manag. 2016;9163618. doi: 10.1155/2016/9163618.
16. Karin Gravare Silbernagel KG, Vicenzino BT, Rathleff MS, Thorborg K. Isometric exercise for acute pain relief: is it relevant in tendinopathy management?.Br J Sports Med. 2019;53(21):1330-1331. doi: 10.1136/bjsports-2019-100591.
17. Bannwarth B. Drug-induced musculoskeletal disorders. Drug Saf. 2007;30(1):27-46. doi: 10.2165/00002018-200730010-00004.
18. Franchi S, Moschetti G, Amodeo G, Sacerdote P. Do All Opioid Drugs Share the Same Immunomodulatory Properties? A Review From Animal and Human Studies. Front Immunol. 2019;10:2914. doi: 10.3389/fimmu.2019.02914
19. Sacerdote P. Opioids and the immune system. Palliat Med. 2006;20(Suppl 1):s9–15.
20. Shavit Y, Ben-Eliyahu S, Zeidel A, Beilin B. Effects of fentanyl on natural killer cell activity and on resistance to tumor metastasis in rats. Dose and timing study. Neuroimmunomodulation. 2004;11:255–60.
21. Alhazzani W, Møller MH, Arabi YM, Loeb M, Gong MN, Fan E, et al. Surviving Sepsis Campaign: guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19). Intensive Care Med. 2020;46:854–87.
22. Tok F, Özçakar L, De Muynck M, Kara M, Vanderstraeten G. Musculoskeletal ultrasound for sports injuries. Eur J Phys Rehabil Med. 2012;48:651–63 quiz 707.
23. Ahmadi A, Bazargan-Hejazi S, Heidari Zadie Z, Euasobhon P, Ketumarn P, Karbasfrushan A, et al. Pain management in trauma: a review study. J Inj Violence Res. 2016;8:89–98.
24. Lane E, Latham T. Managing pain using heat and cold therapy. Paediatr Nurs. 2009;21(6):14-8. doi: 10.7748/paed2009.07.21.6.14.c7146.
25. Airaksinen O, Kyrklund N, Latvala K, Kouri JP, Grönblad M, Kolari P. [Beneficial effect of cold therapy gel in pain and recovery of function in soft tissue injuries]. Duodecim. 2003;119(11):1032-36.
26. Chandler A, Preece J, Lister S. Using heat therapy for pain management. Nurs Stand. 2002 13-19;17(9):40-42.doi: 10.7748/ns2002.11.17.9.40.c3297.
27. Borisovskaya A, Chmelik E, KarnikA. Exercise and Chronic Pain. Adv Exp Med Biol. 2020;1228:233-253. doi: 10.1007/978-981-15-1792-1_16.
28. Heather R Kroll. Exercise therapy for chronic pain. Phys Med Rehabil Clin N Am. 2015;26(2):263-81. doi: 10.1016/j.pmr.2014.12.007. .
29. Moulin DE. Systemic drug treatment for chronic musculoskeletal pain. Clin J Pain. 2001;17(4 Suppl):S86-93. doi: 10.1097/00002508-200112001-00017.
30. Cavalli E, Mammana S, Nicoletti F, Bramanti P, Mazzon E. The neuropathic pain: an overview of the current treatment and future therapeutic approaches. Int J Immunopathol Pharmacol. 2019;33: doi: 10.1177/2058738419838383
31. Hurdle M-FB Ultrasound-Guided Spinal Procedures for Pain: A Review. Phys Med Rehabil Clin N Am. 2016;27(3):673-86.doi: 10.1016/j.pmr.2016.04.011.
32. Narouze S, Peng PW. Ultrasound-guided interventional procedures in pain medicine: a review of anatomy, sonoanatomy, and procedures. Part II: axial structures. Reg Anesth Pain Med. 2010;35:386–96.
33. Korbe S, Udoji EN, Ness TJ, Udoji MA. Ultrasound-guided interventional procedures for chronic pain management. Pain Manag. 2015;5:465–82.
34. Bae G, Kim S, Lee S, Lee WY, Lim Y. Prolotherapy for the patients with chronic musculoskeletal pain: systematic review and meta-analysis. Anesth Pain Med (Seoul). 2021;16(1):81-95. doi: 10.17085/apm.20078.
35. Hauser RA, Lackner JB, Steilen-Matias D, Harris.DK A Systematic Review of Dextrose Prolotherapy for Chronic Musculoskeletal Pain. Clin Med Insights Arthritis Musculoskelet Disord. 2016;9:139-59.

doi: 10.4137/CMAMD.S39160.
36. Taniguchi Y, Yoshioka T, Kanamori A, Aoto K, Sugaya H, Yamazaki M. Intra-articular platelet-rich plasma (PRP) injections for treating knee pain associated with osteoarthritis of the knee in the Japanese population: a phase I and IIa clinical trial. Nagoya J Med Sci. 2018;80(1):39-51. doi: 10.18999/nagjms.80.1.39.
37. Sucuoğlu H, Üstünsoy S. The short-term effect of PRP on chronic pain in knee osteoarthritis. Agri. 2019;31(2):63-69.doi: 10.14744/agri.2019.81489.