Utilization of Corticosteroid Injections in a Student-run Free Clinic Setting

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Abstract

Uninsured patients face obstacles when attempting to treat orthopedic chronic pain conditions. The implementation of a corticosteroid injection program offers pain relief to the uninsured patients seen at the Orthopedics Clinic of Eastern Virginia Medical School's H.O.P.E.S. (Health Outreach Partnership of EVMS Students) Clinic. Though surgery is often necessary to cure these patients' pain, the injections help improve the patients' quality of life. Additionally, this program provides students a unique learning opportunity to thoroughly evaluate these patients and to better their clinical skills. The implementation of this program demonstrates the role that student-run free clinics can play in helping manage chronic pain and can serve as a model for other clinics.

Introduction

Over 100 million Americans suffer from chronic pain, more than diabetes, heart disease, and cancer combined.[1] Chronic pain is an extraordinary burden on the U.S. healthcare system and the U.S. economy as these patients repeatedly seek treatment and imaging in emergency rooms and urgent care facilities and are often unable to overcome their disabling pain. Additionally, patients with chronic pain are more likely to suffer from depression and insomnia.[2] Patients with a lower socioeconomic status express a higher incidence of chronic pain.[3] Specifically, the uninsured population lacks access to options to manage their chronic pain, such as surgery, physical therapy, and regular follow-up care, and have no choice but to live with their pain. Overall, uninsured patients who are admitted to hospitals are at a higher risk for in-hospital mortality.[4]

Chronic pain management ranges from pain medications, such as non-steroidal anti-inflammatory drugs (NSAIDs) or opiates, to physical therapy rehabilitation to orthopedic surgery. NSAIDs and opiates provide only temporary pain relief and can cause systemic side effects, including opiate addiction; however, physical therapy rehabilitation is a costly treatment to pursue for an uninsured patient, making that treatment route difficult to pursue. One study shows that physical therapy treatment of osteoarthritis averaged to $543 per year.[5] Free clinics are often unable to prescribe or carry narcotics due to high costs and significant regulations and thus are limited to NSAIDs in their ability to care for uninsured chronic pain patients. This places student-run free clinics in a different category than larger health systems providing care to underserved communities, like federally qualified health centers and Veteran Affairs health systems. Uninsured patients who come to the H.O.P.E.S. clinic have limited treatment options than

those offered at these other clinics. Additionally, pain that is orthopedic in nature can be especially difficult to treat in the student-run free clinic environment. The surgical nature of the field makes it less conducive to treatment within the confines of an outpatient clinic. After identifying the cause of pain, clinics often can struggle to treat these patients adequately. Recruiting orthopedic physicians to student-run free clinics, where they do not have access to an operating room, is difficult, and patients in need of these services frequently fall through the cracks.

The Eastern Virginia Medical School (EVMS) H.O.P.E.S. Student-run Free Clinic has attempted to bridge this gap in care with the introduction of corticosteroid injections in its Orthopedics Clinic. Corticosteroid injections can offer patients instant relief for maladies that have pained them for years and have increasingly become a vital part of medical treatment for chronic musculoskeletal pain.[6]

Before administering the injections, student clinicians at the Orthopedics Clinic follow a standardized workflow (Figure 1). Upon arrival to the clinic, patients are evaluated, referred for CT or MRI imaging for definitive diagnosis, and given a NSAID challenge to assess the level of their pain. If improvement is not seen within one month and the diagnosis is consistent with inflammation, the patient is eligible for corticosteroids. After the patient signs the consent form and receives the injection, the patient is advised to perform therapeutic exercises at home and is scheduled for regular follow-up appointments. While injections do not treat the underlying disease, they provide pain relief allowing the patients to maintain functional mobility and make arrangements to better their quality of life.

From the initiation of corticosteroid injections in January 2015 to June 2016, the EVMS H.O.P.E.S. Clinic has administered 19 injections to 13 patients seen at the monthly Orthopedics Clinic (Table 1). Sixteen shots were administered to 11 female patients and three shots to two male patients. The average age of the patients is 52.8 years and average BMI is 32.9 kg/m2. As seen in Table 2, the location of the 19 corticosteroid injections in order of frequency is: right knee (nine injections), right shoulder (six injections), and left knee (four injections). Uninsured patients are unlikely to receive similar care without the presence of the EVMS H.O.P.E.S. Student-run Free Clinic. As the only free clinic in Norfolk to provide orthopedic care, the EVMS H.O.P.E.S. Orthopedics Clinic consistently receives referrals from two free health clinics and one shelter in the area, confirming its unique place in the Hampton Roads community.

Total Patients	13
Female Patients	11
Male Patients	2
Average Age (years)	52.8
Average BMI (kg/m^2)	32.9

Table 1. Baseline Characteristics of patients who received corticosteroid injections at the H.O.P.E.S. Orthopedic Clinic.

Despite the success of corticosteroid injections in relieving musculoskeletal pain, injections do not cure the underlying disease process and are a short-term solution of a chronic problem.[7] Extended use of corticosteroids has its own complications, including avascular necrosis of the surrounding bone. Patients ultimately may require complicated surgery and extensive rehabilitation for a definitive cure, which cannot be provided in a student-run free clinic setting. The majority of patients seen in the EVMS H.O.P.E.S. clinic have complex orthopedic issues due to years of continued use of injured joints after initial injury. In the future, the EVMS H.O.P.E.S. clinic will work to place these patients into academic surgical centers that will adequately treat these patients.

Number of injections by location	
Right knee	9
Right shoulder	6
Left knee	4
Total number of corticosteroid injections	19

Table 2. Description of the location of corticosteroid injections.

In conclusion, chronic pain is a critical problem in the U.S. and is even more pronounced among underserved populations. Free clinics can struggle to treat orthopedic pain due to limitations in resources. The EVMS H.O.P.E.S. Clinic is attempting to bridge that gap by utilizing corticosteroid injections in this group of patients. Over the last 18 months, the Orthopedics Clinic has provided pain relief to its patients allowing them to participate in activities of daily living with less pain. The clinic also provides medical and physician assistant students a learning opportunity to obtain specific skills and to increase their exposure to the field of orthopedics. The implementation of this program shows the role that student-run free clinics can play in helping manage chronic pain and can hopefully serve as a model for other clinics.

References

1. *Relieving Pain In America, A Blueprint for Transforming Prevention, Care, Education and Research*. Washington, D.C.: National Academies Press; 2011.
2. Wilson K, Eriksson M, D'Eon J, Mikail S, Emery P. Major Depression and Insomnia in Chronic Pain. *The Clinical Journal of Pain*. 2002;18(2):77-83. doi:10.1097/00002508-200203000-00002.
3. Mcilvane J. Disentangling the effects of race and SES on arthritis-related symptoms, coping, and well-being in African American and White women. *Aging & Mental Health*. 2007;11(5):556-569. doi:10.1080/13607860601086520.
4. Hadley J. Comparison of uninsured and privately insured hospital patients. Condition on admission, resource use, and outcome. *JAMA: The Journal of the American Medical Association*. 1991;265(3):374-379. doi:10.1001/jama.265.3.374.
5. Lanes SF, Lanza LL, Radensky PW, et al. Resource utilization and cost of care for rheumatoid arthritis and osteoarthritis in a managed care setting: the importance of drug and surgery costs. *Arthritis Rheum*. 1997;40(8):1475-81.
6. Arroll B. Corticosteroid injections for osteoarthritis of the knee: meta-analysis. *BMJ*. 2004;328(7444):869-0. doi:10.1136/bmj.38039.573970.7c.
7. Hepper C, Halvorson J, Duncan S, M. Gregory A, Dunn W, Spindler K. The Efficacy and Duration of Intra-articular Corticosteroid Injection for Knee Osteoarthritis: A Systematic Review of Level I Studies. *Journal of the American Academy of Orthopaedic Surgeons*. 2009;17(10):638-646. doi:10.5435/00124635-200910000-00006.