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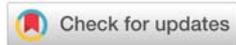
Received: 24 August, 2018

Accepted: 17 October, 2018

Published: 18 October, 2018

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Mini Review

## Chronic back pain: A society primed for pain with an emphasis on passive treatments

(660%), as well as injections (249%), which reflects healthcare overutilization and fulfilment of patient expectations, perhaps, more than an insidious secondary gain theory on the part of pain management providers [1]. Patients should not be persuaded to distrust their doctors, who are simply trying to alleviate pain and suffering with the best tools they have.

**Assumption #2:** Epidural steroids are proven unsafe and can result in devastating consequences. The safety profile for spinal injections is actually very good when compared to opioid or NSAID therapy. Opiates were linked in 2010 to over 16,000 deaths [2]. NSAIDs, which are commonly used both over the counter and in prescription doses, accounted for between 3000 and 16000 deaths per year depending on the study and methodology. This is not to mention the obvious inherent risks of spine surgery, which far outweigh the risks of any injection therapies. The risks of infection with epidural steroid injections is quite low (less than 0.1–0.01%), and the reported catastrophic complications such as death or paralysis reside in the realm of case reports. Furthermore, these rare occurrences can usually be explained (i.e., inadvertent placement of particulate steroid into the vessels supplying the spinal cord or brain) and prevented (by use of correct guideline-based techniques) [3].

**Assumption #3:** Doctors should only use FDA approved treatments. Actually, waiting for FDA approval of treatment options for patients would leave many treatments unavailable to patients. For instance, many of the non-addictive medications available to treat pain, the solution to clean the skin prior to an epidural, and the injectable steroid that is used are all commonly off-label usage. This isn't by any means unique to pain medications, as several antihypertensives, mood stabilizing medications, and anticoagulant medications are commonly prescribed off label as well [4]. Once a drug reaches approval for a specific indication, or becomes a generic where other companies can ride the coattails of the original drug, the parent pharmaceutical company has little financial incentive to spend the millions of dollars required to seek more indications. As an advocate for our patients with the primary goals of improving function and relieving pain, we use our best

### Review

The article published on the July 31, 2018 issue of the New York Times science section, "After Doctors Cut Their Opioids, Patients Turn to a Risky Treatment for Back Pain" raises several thoughtful and concerning issues in pain management, including the lack of proven efficacy of spinal injections and the rising utilization of injections for the management of pain. In the interest of full disclosure, we are a group of Harvard spine and pain specialists from the department of Physical Medicine and Rehabilitation that emphasizes the importance of exercise, discourages opioid therapy for non-malignancy related pain, performs spinal injection procedures, and commonly practices non-FDA approved interventions. We take issue with several assumptions made by the author, as follows:

**Assumption #1 :** The author suggests injections are taking the place of opioid therapy, and in some cases, are used as "blackmail" for opioid prescriptions. The fact is, the rising utilization of injections long predates the opioid cutbacks, and there is no proven correlation between decreased opioid prescribing and increased injection rates. Medicare data showed that between 2000 and 2011, epidural steroid injections of various types increased from 130 to 500%. To state that the relatively small increase in epidurals since the opiate cutback is related to the decrease in opioid prescribing is misleading. A more accurate statement would be that there has been an exponential increase in spine imaging (307%) and surgery

judgement of the best available options to help our patients improve.

Although the author cites some anecdotal practices that hold out opiates in trade for shots, this is not common or ethical practice. However, if a patient is not compliant with a doctor's recommended treatment plan (which may include exercise, non-opiate medications, counseling, injections, and complementary therapies) and instead solely expect long-term opiates for their non-malignancy related pain, it is understandable if such a patient was not kept in a physician's practice. It is paramount to minimize the role of opiate therapy and optimize non-opiate therapy in non-malignancy related pain, given that in both surgical and non-surgical settings, this is the recommendation of the CDC and guidelines at all state and federal levels [5]. As clinicians, we have all long understood that beyond the catastrophic risk of overdose and death from opioids. Less well known is that patients can develop opioid induced hyperalgesia (a well-studied phenomenon of increased pain sensitivity from long-term opioid use) [6], mood problems, testosterone deficiency, constipation, and many other adverse effects from this class of medications [7]. To suggest that an epidural steroid injection every few months to manage difficult chronic neuropathic spine pain is more dangerous than long-term opioid therapy is simply misinformed.

The suggestion that there is a direct causal relationship between less opioid prescribing and increased epidural steroid injections oversimplifies a very complex problem. It highlights how underrepresented the most important aspects of pain management are. Our society believes the Magnetic Resonance Imaging (MRI) reliably shows what the source of the pain is. Patients are very upset when an MRI is not ordered for acute low back pain. Contrary to patient and physician perceptions, imaging studies don't reliably predict who should have pain, who should get shots, or who will need surgery. MRI shows in amazing and exquisite detail muscles, nerves, joints, discs, spinal cord, disc herniations, spinal stenosis, infections, occult fractures, and various tumors. However, studies on asymptomatic adults over 65 reveal that nearly everyone has some degree of degenerative disc disease and arthritis, and they have no pain! [8,9]. Terms like degenerative disc disease, bulging discs, slipped discs have entered the public lexicon as terrible conditions that lead to chronic interminable suffering. How does a condition like degenerative disc disease even deserve the term "disease" when it is seen ubiquitously as we age and commonly causes no symptoms? I think what MRIs don't show is pain, which is an experience affected by complex psychosocial and environmental factors and felt in the brain. It is a very bitter pill indeed, for some, when patients are told their MRI is healthy and they should exercise despite the pain, practice mindfulness meditation, or train with a therapist to learn cognitive behavioral therapy. Many factors go in to who develops troubling symptoms, including, to name a few, local inflammation, mechanical factors like body weight, and joint/ muscle imbalances. In terms of the transition from acute to chronic pain, we have to consider the deeper "central sensitization" pathways of the spinal cord and brain, genetics, the nature in which the brain learns and predicts pain, and

certainly the psychosocial context and meaning of pain (Am I going to lose my job? Will I get my work/ disability/ car accident compensation? Will I have to live with this forever? Won't this just worsen with age?).

As demonstrated by our growing healthcare expenditures and health insurance costs, our current healthcare model promotes healthcare overutilization, patient passivity, and the expectation that all pain is pathological, with a medical "cure" that can fix it. There is a lack of societal emphasis on active treatments. Active treatments, which are the safest and arguably best pain treatments, require patient effort. They require a very difficult conversation between the treating physician and patient, and a very time-consuming treatment plan. Most importantly, they allow the patient to be more responsible for their problem and the treatment. The term "responsible," here, is not used to ascribe blame. Rather, it is meant to empower the patient to re-conceptualize their problem differently, and to work on facing maladaptive behaviors (fear avoidance, pain catastrophizing, etc.), and try to adopt a healthy lifestyle. Active treatments, such as exercise, healthy diet, cessation of bad habits and drug dependency, cognitive behavioral therapy, diet, and meditation, require patient effort. Ironically, although such active "self-care" treatments are proven to be inexpensive and cost effective, they are rarely covered by insurance carriers. Passive treatments, such as medications, injections, and surgery, are covered by insurance carriers and by way of current medical culture, have come to be what patients expect and what doctors prescribe. The problem is that both patients and doctors try to fit the square peg in the round hole as they try to explain away many commonly seen degenerative findings as causal, even when there is only partial, at best, concordance with symptoms.

In the real-world pressures faced by all physicians, including lack of time and energy to spend with individuals, and perhaps the desire to please and avoid difficult conversations, it is much easier to offer an injection, pill, or even surgery to fight the terrible pain. Patient satisfaction scores are significantly higher when patients are recommended these conventional options, and clinicians are under increasing pressure to maintain their 5-star rating. Ultimately, physicians want to be able to provide their pain patients with options to improve their function and engage them in a mutually agreed upon treatment plan, which includes informed consent about the risks, benefits, and alternatives of the various choices. When articles such as this demonize epidural steroids along with the physicians that have the difficult job of treating chronic pain, reducing the story down to two variables such as opioids and epidurals, the public does not glean an accurate impression but is instead being fed a misleading narrative. To be nihilistic about any pain treatment, whether it be opioid or procedure, is only going to hinder pain care and limit the options of patients who respond to such treatments. The article functions as sensational joyride that makes for very interesting but non-informative reading.

## Disclosure/Conflict of Interest Statement

Dr. Kurz, Dr. Isaac, and Dr. Caparo certify that they have no affiliations with or involvement in any organization or entity

with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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