SHOULD WE STILL BE RECOMMENDING "RICE" and anti-inflammatories FOR INJURIES?

It did not take me long into practicing medicine as a sports medicine physician to realize I was not there to keep patients from having surgery. I was there to treat them until they needed surgery.

I started to question the treatments I was recommending. Telling someone to get a steroid shot which will help less each time until eventually they needed surgery made me uncomfortable to say the least. One study I found said the average amount of time a steroid injection works is 2 weeks. 2 weeks!! What are we doing?? The only answer I could get from my mentors is "well it is what we have always done and its covered by insurance." As my mom will tell you, I am not one to take half a** answers that do not actually answer my question in a way I consider acceptable.

My mom developed ankle arthritis after an injury many years ago. Her insurance covered for her to have steroid injections into her ankle every 3 months and when this stopped working after a couple years and her arthritis had advanced significantly, they paid for an ankle fusion. It took her almost a full year to recover. This was pre-regenerative medicine days for me, and I kick myself every day for not knowing about it. If after her trauma, or at the start of her symptoms we had chosen to treat the root cause and not done covers ups she could have avoided surgery for at least several years and hopefully forever. My mom was told she only had a certain number of steps after the fusion, so use them wisely. Not what you want to hear. Now we know it doesn't have to be this way, and we can treat her pain and other joints without more surgery using treatments like perineural injections, prolotherapy, or PRP.

A question that plagued me was why these treatments have negative effects and seem to make the problem we are using them to treat, worse.

The risk of steroid injections is slowly making its way to mainstream medicine and media. We have known since the 1990's that steroid injections in the doses being used is harmful. The doses are supraphysiologic due to a manufacturing problem back in the 1960's. Somehow, we are still using those doses today. To give some perspective, the average dose a human receives for a joint injection is 40 or 80 mg. A veterinarian at a conference I was out said the max dose they give a horse is 18 mg. How can we not have fixed this problem by now??!! Another article showed less than 3 mg may have some benefit, but over that is where problems start. An article in 2022 (https://pubmed.ncbi.nlm.nih.gov/35544595/) showed those with low back pain who took NSAIDS were more likely to develop chronic pain at 2 and 6 years later. There was a just a new research article (https://pubs.rsna.org/doi/10.1148/radiol.233081): Conclusion: Corticosteroid injections were associated with higher OA (osteoarthritis) progression than HA (hyaluronic acid) injections and controls, whereas HA was associated with decreased progression at MRI for up to 2 years after injection. This is not new news. Why are we wasting time, money, and resources on research like this? And then the outcomes still are not followed. Steroid injections are still routinely done and covered by insurance. It makes absolutely no sense.

What is also not always talked about is the risk of short-term (few days) oral steroids. Long term steroid use is fraught with risks, but in a few certain conditions it is a necessary treatment. Short

term prescriptions for oral steroids, such as prednisone, is often give for certain upper and lower respiratory conditions, auto-immune conditions, and back or neck pain thought to be due from spine or disc problems. I have also seen it used by some for treatment of nonspecific joint or muscle aches and pains. I questioned a previous colleague about her use for nonspecific wrist pain. She said "well if NSAIDs are anti-inflammatories and we recommend those, prednisone is a much stronger anti-inflammatory so it should work better." Too bad this logical seeming answer is incorrect. NSAIDs and steroids work by different mechanisms in the body. NSAIDs now have many studies on their short- and long-term risks so should not be routinely recommended for treatment of pain. In my previous colleagues defense she was also trying to find an alternative to narcotic use for treatment of pain refractory to OTC medications, which is whole other discussion. A recent article was published in BMJ looking at the risks of short-term steroid use where over half of those in the study were being given the traditional "Medrol-dose pack". There are many patients being given this medication, most by primary care, in urgent cares, or even the ER. In the first 30 days after starting these medications there was an increased risk of fracture (broken bone), venous thromboembolism (blood clot), and sepsis (life threatening infection) in order of increasing risk over baseline. Overall percentage of patients having these complications was low but rate ratios were high so we should not ignore these short term risks. Rate ratios did decrease after the first 30 days. I think this highlights what many of us know and are trying to change in healthcare, in the setting of an opioid epidemic and other medications with high risk for complications, we need to continue to explore and be open to alternative treatments for pain.

Inflammation can be a complex topic. It has been simplified to all inflammation is bad. But it is not that simple. Inflammation can be acute or chronic. It can follow multiple pathways. In many chronic medical diseases, and most that are considered diseases of civilization (Diabetes, heart disease, stroke, dementia, etc) the inflammatory process has been traced back to similar pathways that are related to what we call poor metabolic health or metabolic dysfunction.

If there is an illness, injury or trauma, a stressful event, an acute inflammatory pathway is started. This is needed to fight an infection, heal, or become more resilient to the next acute stressful event. When it comes to things like inflammation or stress, we want optimal functioning. This does not mean we do not want any, too little, or on the other side, too much. Balance is sometimes used, but think of this more as a homeostasis, fluctuating levels of hormones, cytokines, and neurotransmitters to keep our bodies in an optimal state. We can push our bodies into improved states when exposed to acute events if we have the proper rest and recovery after.

These acute episodes of inflammation help start the healing process by increasing blood flow to the injured area to bring platelets and many other factors to the area to start the repair process. There are 3 stages of healing. The first stage of healing, typically 3-5 days, is inflammation. When this pathway is started it leads to Stage 2, typically 5 days to 6 weeks, and then Stage 3, typically 6 weeks to 6 months (but can be up to a year). If you keep stopping Stage 1 every time you have pain, have a flare, or a new injury your body will not get the proper signals to progress to Stage 2 or 3, effectively blocking your body's innate ability to heal. Our typical pain and injury treatments following the RICE protocol, including NSAIDs and steroids in this, can inhibit that inflammatory healing process. It is better to allow your body to go through its very robust and well-designed healing process, even if it is uncomfortable for a period. Choose treatments that support your body's ability to heal itself if needed. And in some cases, your body may need a boost to help it

along. This is where things like some supplements, perineural injection therapy, prolotherapy, and PRP come in. There are many others we know about now too. It is important to talk with a doctor who can determine the actual cause of your pain or inflammation and who is well versed on all these treatments to know which ones are most appropriate for your condition.

Chronic low-level inflammation is what tends to happen when our bodies are in a state of trying to heal and repair all the time. Constant trauma to our bodies by poor lifestyle which includes, not enough sleep, inappropriate management of stress responses, diets high in vegetable oils, refined carbohydrates, overly processed packaged food, and sedentary lifestyles.

So why with all the studies on the lack of superior outcomes with surgery, ample negative effects of NSAIDS (ie: ibuprofen) and steroid injections (and oral steroids) with minimal benefit, do insurance companies still cover these treatments while treatments like prolotherapy and PRP are considered "experimental" even though they have multiple studies behind them now with better outcomes than surgeries and steroids? The category of "experimental" in this instance is a category used by insurance companies to say they will not cover it and not an actual deep dive into the literature by qualified physicians. So again, why are we still doing steroid injections and recommending NSAIDs for musculoskeletal pain? (Back pain, neck pain, joints, arthritis, degeneration, tendons, ligaments, sprains, strains of the knees, hips, ankles, feet, toes, shoulders, elbows, wrists, hands and fingers)

Great question with not so good answers. Best I can tell money, politics, and egos leading to a perpetuation of incorrect medical advice. Not exactly how I want my medical education to be influenced.

I have read several books now. Two of the most influential have been, "The Price We Pay" by Marty Makary, MD and "Food Fix" by Mark Hyman, MD. There are many others I have read over the past decade that have completely changed my way of thinking about the medical care I want to provide and the healthcare setting I provide it in. This has not been only for my patients but me personally and my family. This is why we opened Intuition Health. We want to be in healthcare setting where we provide actual health and well-being care, not just sick care.

Links to articles on negative effects of procedures covered by insurance. This is just a few. Message me if you would like more references.

1. Certain anesthetics commonly used in joint injections are toxic to chondrocytes, the cells that make up cartilage, which show effects even with single-dose joint injections.

https://www.ncbi.nlm.nih.gov/pubmed/28289821

2. Ikeuchi, M "Clinical characteristics of pain originating from intra-articular structures of the knee joint in patients with medial knee osteoarthritis." *SpringerPlus* 2. November 23, 2013

- Knee Scope Surgery NO BETTER THEN PLACEBO

N Engl J Med. July 2013

- Meniscal Surgery associated with ACCELLERATED DEGENERATION

of the joint

3. Coombes, *JAMA 2013* CORTISONE vs. PT in Lateral Epicondylagia. Randomized, blinded, placebo controlled,165 patients with epicondyalgia >6weeks.

Results: 26 weeks and 1 year: Greater recurrence in Cortisone group. Lower complete recovery in Cortisone group. At 4 weeks PT and placebo had greater complete recovery

4. Vertebral Fractures following Epidural Steroid Injections

- 6000 pts with back pain 3000 did not receive ESI vs 3000 who received ESI
- Increase risk for spinal fracture by 29% with each injection

J Bone Joint Surg Am, June 2013

5. *Long term use of analgesics and risk of osteoarthritis progressions and knee replacement*

Osteoarthritis Cartilage, Nov 10 2015

2 times the risk of progressing to TKR (total knee replacement)

Majority of meds in study -NSAIDS

6. *The Effect of Intra-articular Corticosteroids on Articular Cartilage,*

A Systematic Review

Orthopaedic Journal of Sports Medicine, May 2015

- Corticosteroids have dose-dependent effect on articular cartilage
    - Possible BENEFICIAL EFFECTS occurring at low doses. < 2mg
        - Increased cell growth and recovery from damage was observed.
        - Decreased inflammatory markers.
    - Definite DETRIMENTAL EFFECTS at high doses. >3mg
        - Associated with gross cartilage damage and chondrotoxicity.

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8. Arthroscopic knee surgery to “clean up” a painful knee with arthritis is no better than fake surgery

http://www.nejm.org/doi/full/10.1056/NEJMoa0708333

9. Arthroscopic knee surgery doesn't help middle aged knee pain patients with meniscus tears and mild to moderate arthritis any better than plain old physical therapy

http://www.nejm.org/doi/full/10.1056/NEJMoa1301408

10. Arthroscopic Partial Meniscectomy versus Sham Surgery for a Degenerative Meniscal Tear

Arthroscopic knee surgery for patients with a degenerative meniscus tear and no arthritis doesn't help patients any better than a fake surgery

http://www.nejm.org/doi/full/10.1056/NEJMoa1305189?query=featured_home