Is Stem Cell Therapy for Osteoarthritis the Way of the Future?

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A Look at Regenerative Medicine and OA

Most of the articles I written are based off a very important assumption — that osteoarthritis (OA) is a disease that there is no cure for currently. It's a very bleak assumption, but one that I always feel needs to be addressed immediately.

Like ripping off a bandage, the realization of the chronic nature of osteoarthritis can be painful, but acceptance of it is the only way to move forward and divert our efforts towards coping with the disease effectively.

Because there is no known cure for the disease, therapy for osteoarthritis often treats the symptoms rather than the arthritis itself. Although this assumption is still true, the popularity and growth of the field of regenerative medicine brings the hope of a potential cure for osteoarthritis sufferers one day.

There are a few variations to current regenerative therapies and each one was has a few unique features to it. These regenerative therapies include prolotherapy, platelet-rich plasma (PRP), and Regenokine.

How Do Prolotherapy, PRP, and Regenokine Work?

Although each of these therapies works a little differently, they all have the same fundamental mechanism of action. The theory is that is you will introduce an irritant into the body, and in the case of prolotherapy and PRP, they will create a controlled inflammatory reaction.

This controlled inflammatory reaction, if targeted near the area of a degenerated or arthritic joint, has the potential to stimulate a healing process that can partially reverse the degeneration. Sounds nice — in theory!

Unfortunately, the research has not proven this is exactly how these therapies work. We just know that they work for some people and not for others.

In fact, the research simply indicates that it is remain to be seen what the underlying mechanism behind how PRP and prolotherapy.

Prolotherapy

I would argue that prolotherapy is the most basic therapy offered in regenerative medicine. This is not to mean that it is cheap or ineffective, but the process of administering prolotherapy is simpler than PRP and Regenokine.

Prolotherapy involves injecting dextrose (yes, you read that correctly — dextrose, a type of sugar) into the targeted location. The expectation is that dextrose can act as an irritant when injected and stimulate an inflammatory reaction.

As previously mentioned, this inflammatory reaction has the potential to “heal” or reverse the degenerative process of osteoarthritis. I believed enough in the alternative therapy of prolotherapy over conventional therapies and underwent three rounds of eight injections of it on my spine.

Unfortunately the injections did not improve my pain and admittedly I was very disappointed. Although I was not successful with prolotherapy, I have read of cases where prolotherapy has reduced people’s pain attributed to osteoarthritis.

According to the research done on prolotherapy the main side effects include, but are not limited to, pain and bleeding at the injection site. Patients also report a sense of fullness or numbness at the injection site.

There is also a phenomenon known as “post-injection pain flare” which can occur up to a few days after the injection. Most of these side effects are fairly minor and typically resolve over time.

PRP Therapy

PRP is a bit more complicated than prolotherapy because it involves a patient’s blood. The preparation of PRP involves drawing blood from the patient and centrifuging the blood (spinning the vials of blood at a high speeds in a machine).

The purpose of centrifuging the blood is to separate the components of blood into plasma that is rich in platelets versus blood that doesn’t have platelets. It is believed that platelets contain several different growth factors and other chemicals that help to stimulate the healing process when injected.

Next page: A look at PRP therapy and Regenokine.

PRP Therapy

Similar to prolotherapy, there isn’t extensive research on PRP and the research that has been done shows mixed results. Also like prolotherapy, PRP can have side effects that include, but are not limited to, skin discoloration, infection at the injection site, increased pain, bleeding, and an allergic reaction.

Regenokine

Regenokine is like the Lamborghini of regenerative medicine world because it is very expensive and you probably don’t know anyone who has done it before. But, many believe it will be readily available in the next five to 10 years for the general public as a reasonable option.

The therapy received a lot of media attention a few years back when a few professional athletes like Kobe Bryant and Alex Rodriguez tried a variation of it and reported significant results the treatment. The administration of Regenokine is a fairly complex process:

1. Stem cells, usually from the bone marrow of your hip, are extracted.
2. The stem cells are processed in a lab for about a day.
3. The doctor will re-inject your processed stem cells, along with natural growth factors from your blood platelets, into the area of the arthritic joint.
4. Sometimes another injection of platelet-derived chemicals will also be administered a few days later.

The idea is that introducing stem cells into the vicinity of the arthritic joint will prompt the joint to “heal” and consequently provide pain relief.

Although this procedure involves using stem cells, it is offered in the United States. To make things more complicated, if you want a mega-dose of synthetically grown stem cells, you need to travel to the Cayman Islands to get it done.

What Does the Future Hold?

Regenerative medicine is truly a work in progress but the possibilities it offers for the future are very exciting. Can you imagine the day where you walk into the doctor's office with osteoarthritis and being told you won't have to live with condition for the rest of your life?

Newer regenerative therapies similar to Regenokine are emerging as promising alternatives and have the potential to heal damaged joints. A few of these newer therapies include chondrocyte implantation, mesenchymal stem cells, and cell-based scaffolds. Sounds like some fancy therapies right?

Unfortunately, some of the challenges that slow down the use of regenerative medicine in doctor's offices is that it involves manipulating blood or stem cells. The United States FDA has created precautionary restrictions on the manipulation of cells and that is why many of these therapies are being developed and outside of America.

I'll be the first to admit that regenerative medicine is a part of medicine that is fairly young, not entirely proven, and deserves some skepticism from osteoarthritis suffers. The research on them is limited and the preliminary evidence demonstrates that the jury is still out on these therapies.

However, the idea of a minimally invasive procedure that could partially reverse osteoarthritis and reduce OA pain is enough to get me excited! As a chronic pain sufferer, I have always refused to believe that hope is a bad thing and I am not going to start now with regenerative medicine.