

Part Two Study on Platelet Rich Plasma for the Achilles Tendon

You may have heard the expression, What you see is what you get. Well, in medical research that isn't always the case. Time can be an important factor. For example, treatment results using platelet-rich plasma for tennis elbow were better than results with steroid injections when measured a year after the injections. Three months after the treatments, there was no difference between the two groups.

In this study, orthopedic surgeons from The Netherlands used platelet-rich plasma (PRP) to treat chronic Achilles tendinopathy. The study included a second group of patients who received an injection of saline instead of PRP (the control group). Results were reported six months after the single injection and again now at the end of a full year.

Before we look at those results, let's define a few terms. Tendinopathy refers to damage, degeneration, or pathology of a tendon. It could be from an acute injury or tendinitis. Or it could be a case of chronic tendon pain or tenderness. With both acute and chronic tendinopathy, loss of normal motion and function are observed. But as scientists have shown in chronic tendon problems, there's no active inflammation.

So instead of calling the condition tendinitis, the term tendinosis is used. With tendinosis, the collagen fibers around the tendon are disorganized with an irregular placement of cell structure. There may be increased blood flow to the area but there are no inflammatory cells or processes present.

The next term platelet-rich plasma (PRP) may be new to you but its use is increasing as a treatment for a number of different musculoskeletal conditions. Platelet-rich plasma (PRP) is also known as blood injection therapy. PRP refers to a sample of serum (blood) plasma taken from the patient being treated. The plasma is then injected into the symptomatic (painful or tender) area.

How does it work? Platelet-rich plasma has as much as four times more than the normal amount of platelets. Platelets contain growth factors that act to promote tendon repair. These growth factors send signals to the body that increase blood flow to the area and transport cellular debris and waste from cellular metabolism away from the tissue. This treatment enhances the body's natural ability to heal itself. It is used to improve healing and shorten recovery time from acute and chronic soft tissue injuries.

How can we measure the results of platelet-rich plasma (PRP) for problems like Achilles tendinopathy? Well, there are always the standard tests of joint motion, recording the presence and intensity of pain, and assessing function. And the authors of this study did use those measures. But they went a step further in actually looking at the tendon fibers.

They used a recently validated technique called ultrasonographic tissue characterization (UTC). This is an imaging technique that allows for assessing the condition of individual tendons. It gives a three-dimensional view of the tendon structure. The ultrasonic view of the tendon also made it possible to measure the quality of blood vessels and blood supply to the area (referred to as neovascularization of the tendon).

In addition to asking patients about their level of satisfaction with the treatment, ultrasound measurements were taken before and after treatment. What did they find? There wasn't a measurable difference between the two groups (one treated with platelet-rich plasma and the other with saline).

Both groups were equally satisfied with the results. Both groups had an equal amount of tendon healing and blood flow as shown by the ultrasound testing. The only measurable difference was in terms of return-to-sports. There were more patients in the platelet-rich plasma group (56.5 per cent) who went back to their previous sport compared with the saline (control) group (41.7 per cent).

These results were pretty much the same as the results reported six months after the injection. There are two reasons why the two groups had similar results. The first is the fact that both groups had an injection and it might not be the contents of the needle (plasma versus saline) as much as it is the effects of the needle entering the area. And secondly, patients in both groups performed an exercise program for three months. It is possible the exercise program had as much to do with the results as anything else.

Where do we go from here? The authors make note of the fact that combining platelet-rich plasma (PRP) injection with an eccentric exercise program does not add value to the results. It may be necessary to compare PRP injections alone with exercise alone to see the true effects of each individual treatment.

Reference: Suzan de Jonge, MD, et al. One-Year Follow-Up of Platelet-Rich Plasma Treatment in Chronic Achilles Tendinopathy. In The American Journal of Sports Medicine. August 2011. Vol. 39. No. 8. Pp. 1623-1629.