The Effectiveness of Platelet-Rich Plasma (PRP) Injection in the Treatment of Adults with Tendinopathy: A Systematic Review
Leininger, Peter M., Domonkos, David, Manetti, Niko, Tunis, Brandon, Zdanowicz, Edward
Department of Physical Therapy, The University of Scranton; Scranton, PA, USA.

PURPOSE
To examine, through systematic review of current literature, whether a Platelet Rich Plasma (PRP) injection would improve outcomes in adults with tendinopathy when compared to a control.

MATERIALS/METHODS
The search was limited to human subjects, and studies conducted between 2005 and 2015. Only randomized controlled trials within the last 5 years were included. Peer-reviewed studies involving patients younger than 18 years were excluded. Five of 426 retrieved articles met the inclusion criteria. Information Sources: A search of articles written in the English language was performed. PubMed, Medline, CINHAL, ProQuest, and Science Direct were searched using the terms “PRP” or “platelet rich plasma” and “physical therapy” or “physiotherapy” and “tendinosis” or “tendinopathy”. Methodological quality of clinical trials was measured via the PEDro scale. The PEDro scores were 10, 8, 10, and 10, with an overall average of 9.6.

RESULTS
Three studies, with a total of 97 participants, were measured for pain, function, and activity using the VISA scale. The results demonstrated that after 26 weeks, there was no significant difference between groups treated with PRP and a control group. One study found the PRP group improved significantly more than the placebo/control group at 12 weeks, but improvement was insignificant after 26 weeks. One study, including 54 patients, measured the degree of neovascularization of tendon structure at 6, 12, and 24 months. After six weeks, there was no significant difference in neovascularization between the PRP group and the control group. One study, including 40 participants, measured WORC, SPADI andVAS. After one year, the PRP group was found to be no more effective in improving quality of life, pain, disability, and ROM than the control group.

STUDY INFORMATION

<table>
<thead>
<tr>
<th>Authors of Study</th>
<th>Sample Size</th>
<th>Pathology Examed</th>
<th>Intervention (PRP)</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>de Vos et al (2011)²</td>
<td>N=54</td>
<td>Achilles tendinopathy</td>
<td>PRP injection with eccentric exercise program</td>
<td>Saline injection with eccentric exercise program</td>
</tr>
<tr>
<td>de Vos et al (2010)³</td>
<td>N=54</td>
<td>Achilles tendinopathy</td>
<td>PRP injection with eccentric exercise program</td>
<td>Saline injection with eccentric exercise program</td>
</tr>
<tr>
<td>Dragoo et al (2014)⁴</td>
<td>N=23</td>
<td>Patellar tendinopathy</td>
<td>PRP injection with dry needling and eccentric exercise program</td>
<td>Dry needling and eccentric exercise program</td>
</tr>
<tr>
<td>Kesikburun et al (2013)⁵</td>
<td>N=40</td>
<td>Rotator Cuff tendinopathy</td>
<td>PRP injection with exercise program</td>
<td>Saline injection with exercise program</td>
</tr>
<tr>
<td>Kearney et al (2013)⁶</td>
<td>N=20</td>
<td>Achilles tendinopathy</td>
<td>PRP injection alone</td>
<td>Eccentric exercise program</td>
</tr>
</tbody>
</table>

PRISMA
- Records identified through database searching (n=126)
- Records excluded (n=98)
- Full text articles assessed for eligibility (n=27)
- Studies included in systematic review (n=5)

KEY WORDS
Platelet-rich plasma, Tendinosis, Tendinopathy

CONCLUSION
This systematic review of the effectiveness of PRP injection concluded that it is not an effective treatment for adults with tendinopathy. Future research, including more rigorous studies, needs to be conducted concerning this topic to better understand the effectiveness of PRP injection. Comparison to other interventions, including augmented soft tissue mobilization and heavy eccentric training, for the treatment of tendinosis would prove enlightening.

CLINICAL RELEVANCE
Physical therapists often treat adult patients who present with some type of tendinopathy. Determination of the most effective intervention for this condition is extremely important.

REFERENCES

Presented at APTA CSM, Anaheim, CA 2016