



Studies

PRP treatment for the knee

Short term results comparison of intraarticular platelet-rich plasma (prp) and hyaluronic acid (ha) applications in early stage of knee osteoarthritis

RESULTS:

In the PRP and HA groups, when pre-treatment KSS and VAS scores were compared with post-treatment three and six-month scores, a statistically significant difference was seen. When the groups were compared with each other, there was no significant difference between pre-treatment KSS and VAS pain scores; however, a significant difference was found between post-treatment three and six-month scores.

CONCLUSION:

In this study, the intra-articular PRP administration was more efficient than the HA administration in early knee osteoarthritis.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4694399/>

Platelet-rich plasma for osteoarthritis treatment

CONCLUSION:

We conclude that, based on randomized controlled studies, PRP seems to produce improvement in pain and joint function in knee osteoarthritis, both compared to placebo and hyaluronic acid. The response can be sustained for a period of up to two years, and seems to be more evident in milder cases of OA. There is no consistent evidence of the action of PRP on the cartilage measured by imaging.

<http://www.sciencedirect.com/science/article/pii/S225550211500053X>

Intraosseous infiltration of platelet-rich plasma for severe knee osteoarthritis

CONCLUSION:

Intraosseous infiltration exploits the communication between the cartilage and subchondral bone such that PRP reaches the deeper layers of cartilage. There is a viscous consistency of PRP and the cellular material of subchondral bone that coagulates and remains in the areas of injured cartilage from which it has come (Fig 4). In addition, infiltrating PRP directly into the subchondral bone could act on this tissue and its mesenchymal stem cells; these cells would be maintained in the PRP matrix and modulate the repair process of subchondral bone, which has a direct impact on halting the progression of OA. Therefore, with our technique, PRP could achieve a more extensive range of action and, thereby, higher effectiveness and could be useful not only in severe OA but also in other pathologies.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4314556/>

Knee Osteoarthritis Injection Choices: Platelet- Rich Plasma (PRP) Versus Hyaluronic Acid (A one-year randomized clinical trial)

RESULTS:

At the 12-month follow-up, WOMAC pain score and bodily pain significantly improved in both groups; however, better results were determined in the PRP group compared to the HA group ($P < 0.001$). Other WOMAC and SF-36 parameters improved only in the PRP group. More improvement (but not statistically significant) was achieved in patients with grade 2 OA in both the groups.

CONCLUSION:

This study suggests that PRP injection is more efficacious than HA injection in reducing symptoms and improving quality of life and is a therapeutic option in select patients with knee OA who have not responded to conventional treatment.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4287055/>

A 5-year follow-up after cartilage repair in the knee using a platelet-rich plasma-immersed polymer-based implant

CONCLUSION:

Our clinical data based on the validated KOOS suggest that the implantation of the polyglycolic acid-hyaluronan implant immersed with autologous PRP in focal cartilage defects after drilling leads to clinically meaningful and significant improvement of the patients' situation. The clinical results found after 5 years confirm the good findings that have been found in the short-term and suggest that the one-step procedure leads to good lasting results with potential for a good future long-term outcome.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4209503/>

Platelet rich plasma and knee surgery

CONCLUSION:

There is a great deal of research demonstrating the safety and efficacy of PRPs in the field of orthopedic surgery. Drawing on biological evidence, our team has developed several innovative procedures for the arthroscopic repair of knee injuries assisted by PRGF-Endoret. Collectively the application of tissue-engineering biology to repair and reconstruct anatomical parts of the knee, using different formulations of PRGF-Endoret, has yielded promising clinical outcomes. These efforts point to a future where tailored PRPs will be used for each specific medical purpose.

<https://www.hindawi.com/journals/bmri/2014/890630/>

Platelet-rich plasma prevents blood loss and pain and enhances early functional outcome after total knee arthroplasty: a prospective randomised controlled study

CONCLUSION:

We found significant reduction in blood loss, postoperative pain and need for narcotic use after application of APG in patients undergoing TKA, but wound healing was statistically insignificant. Achievement of earlier and greater ROM and quicker and better functional outcome were observed in the APG group. However, at six months and later follow-up, both groups had similar functional scores. We recommend local application of PRP during TKA to reduce blood loss and pain.

<http://www.ncbi.nlm.nih.gov/m/pubmed/24114251/?i=35&from=platelet%20rich%20plasma%20osteoarthritis&filters=ffrft>

The Conservative Management of Osteoarthritis — Hyaluronic Acid, Platelet Rich Plasma or the Combination?

CONCLUSION:

Un-published preliminary data suggest that this combination is useful in the treatment of different forms of OA but only prospective randomized double blind studies, preferably using both HA and PRP as comparators (three armed), and a selected stage of OA severity, preferable early OA, will provide sound information about the impact of this novel approach.

<http://cdn.intechopen.com/pdfs-wm/48378.pdf>

Effectiveness of platelet-rich plasma in the treatment of moderate knee osteoarthritis a randomized prospective study

CONCLUSION:

Considering the evidence, this minimally invasive injection procedure appears to be safe and effective, and since PRP injections biologically change the articular cartilage, they may be a worthwhile treatment option even in moderate knee osteoarthritis. Further studies are required with larger sample sizes with longer follow-ups and objective outcome measures.

In conclusion, PRP is an effective and reliable treatment for functional status and pain for Grade 3 OA, and a minimum of two injections appears to be appropriate.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4713808/>

The Use of Platelet-Rich Plasma in Arthroscopy and Sports Medicine: Optimizing the Healing Environment

CONCLUSION:

The use of PRP technologies has opened another door in the treatment of soft-tissue injuries. An understanding of the principles of tissue healing and the pathophysiology behind PRP, as well as a basic knowledge of the differences in commercial systems involved in the preparation of these products, is essential to the successful application of this modality in both the conservative and operative management of soft-tissue injury. Promising results have been shown in the fields of sport medicine and arthroscopy. Future directions include improving the results of arthroscopic procedures and related surgery—in particular, primary ACL reconstructions. Further research will also be aimed at delineating correct dosage, timing, 276 E. LOPEZ-VIDRIERO ET AL. and quantification, as well as ideal techniques of PRP application.

http://www.orthops.si/documents/prp-2010_Lopez-Vidriero_Use-PRP-in-Arthroscopy.pdf

Intraarticular injections (corticosteroid, hyaluronic acid, platelet rich plasma) for the knee osteoarthritis

CONCLUSION:

We prefer PRP for patients who are younger than 60 years, with mild OA and body mass index < 30, and for patients that do not have any extremity malalignment. If the patients are older than 60 years, or their body mass index > 30, or they have moderate OA, we still apply PRP injection, which is followed by a supplementary single dose of HA injection 2 to 4 weeks after PRP injection.

https://www.researchgate.net/publication/264056889_Intraarticular_injections_corticosteroid_hyaluronic_acid_platelet_rich_plasma_for_the_knee_osteoarthritis

PRP treatment for the elbow

Comparison of Local Injection of Platelet Rich Plasma and Corticosteroids in the Treatment of Lateral Epicondylitis of Humerus

CONCLUSION:

The results revealed that the long term efficacy of PRP treatment is better. Therefore, we concluded PRP as a superior treatment option in cases of tennis elbow. However, keeping in view the limited period of follow up in the present study we recommend longer follow up studies to further consolidate our findings and establish the long term efficacy of PRP in cases of lateral epicondylitis.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4573006/>

Platelet-rich plasma versus open surgical release in chronic tennis elbow: A retrospective comparative study

RESULTS:

VAS and Mayo Elbow Scores of the PRP group had improved as a mean of 83% ($p = 0.0001$), 74% ($p = 0.0001$) over baseline and 34.2 pounds gain of grip strength.

CONCLUSION:

The PRP seems to be better for pain relief and functionality in the short and mid-term periods.

<http://www.sciencedirect.com/science/article/pii/S0972978X15001774>

The effect of platelet-rich plasma injection on lateral epicondylitis following failed conservative management

RESULTS:

88.2% improved their OES. 8.8% reported symptom progression. One patient had no change. No patients suffered adverse reactions. Two patients underwent an open release procedure. One had the injection repeated.

CONCLUSION:

An injection of PRP improves pain and function in patients suffering from LE where conservative management has failed.

<http://www.sciencedirect.com/science/article/pii/S0972978X15001555>

Platelet-Rich-Plasma Injections in Treating Lateral Epicondylitis: a Review of the Recent Evidence

CONCLUSION:

Nine studies met our inclusion criteria including 6 RCT's for the purpose of analysis. PRP injections have an important and effective role in the treatment of this debilitating pathology, in cases where physiotherapy has been unsuccessful.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26578837/?i=4&from=prp%20elbow>

Platelet-rich plasma for chronic lateral epicondylitis: Is one injection sufficient?

CONCLUSION:

Patients with chronic lateral epicondylitis reported significant pain relief and gain in function as well as quality of life 6 months after localized PRP treatment. A single PRP injection may be sufficient.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26318887/?i=8&from=prp%20elbow>

A retrospective comparison of the management of recalcitrant lateral elbow tendinosis: platelet-rich plasma injections versus surgery.

CONCLUSION:

Similar outcomes in pain improvement and return to work may be achievable with either PRP injections or surgery in recalcitrant lateral elbow tendinosis. PRP injections may be a reasonable alternative for patients apprehensive to proceed with surgery or poor surgical candidates.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4447680/>

Efficacy of platelet-rich plasma for chronic tennis elbow: a double-blind, prospective, multicenter, randomized controlled trial of 230 patients.

CONCLUSION:

No significant differences were found at 12 weeks in this study. At 24 weeks, however, clinically meaningful improvements were found in patients treated with leukocyte-enriched PRP compared with an active control group.

<http://www.ncbi.nlm.nih.gov/m/pubmed/23825183/?i=34&from=prp%20elbow>

Treatment of partial ulnar collateral ligament tears in the elbow with platelet-rich plasma.

CONCLUSION:

The results of this study indicate that PRP is an effective option to successfully treat partial UCL tears of the elbow in athletes.

<http://www.ncbi.nlm.nih.gov/m/pubmed/23666850/?i=35&from=prp%20elbow>

Treatment of Chronic Lateral Epicondylitis: Platelet Rich Plasma versus Extra-Corporeal Shock Wave Therapy

CONCLUSION:

Platelet rich plasma was proved to achieve superior results when compared to ESWT as regards pain relief, improvement of elbow function and patient satisfaction at follow-up.

<http://www.scirp.org/journal/PaperInformation.aspx?PaperID=44028>

PRP treatment for the hip

Ultrasound-Guided Injection of Platelet-Rich Plasma and Hyaluronic Acid, Separately and in Combination, for Hip Osteoarthritis: A Randomized Controlled Study

CONCLUSION:

Results indicated that intra-articular PRP injections offer a significant clinical improvement in patients with hip OA without relevant side effects. The benefit was significantly more stable up to 12 months as compared with the other tested treatments. The addition of PRP+HA did not lead to a significant improvement in pain symptoms.

<http://m.ajs.sagepub.com/content/early/2016/01/21/0363546515620383.abstract>

Ultrasound-guided platelet-rich plasma injections for the treatment of osteoarthritis of the hip

CONCLUSION:

This preliminary non-controlled prospective study supported the safety, tolerability and efficacy of PRP injections for pain relief and improved function in a limited number of patients with OA of the hip.

<http://rheumatology.oxfordjournals.org/content/early/2011/11/10/rheumatology.ker303.short>

PRP and cortisone injections in patients with severe chronic hip (greater trochanteric) bursitis

CONCLUSION:

PRP injections are significantly more effective and durable than cortisone injections for the treatment of severe chronic hip bursitis.

<https://www.sciencedaily.com/releases/2014/03/140314093747.htm>

PRP treatment for lumbar conditions

Lumbar Intradiskal Platelet-Rich Plasma (PRP) Injections: A Prospective, Double-Blind, Randomized Controlled Study

CONCLUSION:

Participants who received intradiskal PRP showed significant improvements in FRI, NRS Best Pain, and NASS patient satisfaction scores over 8 weeks compared with controls. Those who received PRP maintained significant improvements in FRI scores through at least 1 year of follow-up. Although these results are promising, further studies are needed to define the subset of participants most likely to respond to biologic intradiskal treatment and the ideal cellular characteristics of the intradiskal PRP injectate.

[http://www.pmrjournal.org/article/S1934-1482\(15\)00971-5/fulltext](http://www.pmrjournal.org/article/S1934-1482(15)00971-5/fulltext)

Recovering the mechanical properties of denatured intervertebral discs through Platelet-Rich Plasma therapy

CONCLUSION:

The results showed that PRP is able to recover the mechanical properties of denatured discs, thereby providing a promising effective therapeutic modality.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26736416/?i=1&from=prp%20intervertebral%20disc>

Platelet-rich plasma induces annulus fibrosus cell proliferation and matrix production

CONCLUSION:

The present findings indicate that both PRP and PL have proliferative effects on AF cells and are able to increase ECM production in vitro. PRP supplementation created a gel-like structure, which affected the morphology of the AF cells, but had no major influence on the cell phenotype in short time culture. Platelet-rich preparations may therefore be considered to promote AF repair. For direct delivery to the defect site, the immediate formation of a stable gel is a clear advantage of PRP compared to PL, minimizing the risk of leakage from the defect site. PL may be considered for AF repair in combination with an AF closure device or material. Long term and preclinical studies will be needed to assess the therapeutic potential of platelet preparations to restore functional AF tissue.

<http://www.ncbi.nlm.nih.gov/m/pubmed/24469887/?i=8&from=prp%20intervertebral%20disc>

Intradiscal Platelet-Rich Plasma Injection for Chronic Discogenic Low Back Pain: Preliminary Results from a Prospective Trial

CONCLUSION:

This trial demonstrates encouraging preliminary 6 month findings, using strict categorical success criteria, for intradiscal PRP as a treatment for presumed discogenic low back pain. Randomized placebo controlled trials are needed to further evaluate the efficacy of this treatment.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26814283/?i=1&from=prp%20low%20back%20pain>

PRP in spine surgery

Posterolateral Arthrodesis in Lumbar Spine Surgery Using Autologous Platelet-Rich Plasma and Cancellous Bone Substitute: An Osteoinductive and Osteoconductive Effect.

CONCLUSION:

PRP used with cancellous bone substitute increases the speed of bone production in posterolateral arthrodesis joining osteoinductive and osteoconductive effect. Autologous PRP can be produced directly in the operative theater. The preparation is very quick and can be made also during surgery. This method is a safe and effective alternative option to the common bone substitutes.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4111944/>

A Randomized Controlled Trial of Lumbar Posterolateral Fusion in Combination with Platelet-Rich Plasma.

CONCLUSION:

In the present study, bone union was achieved more rapidly in the PRP group, which suggests that enhanced bone formation was achieved by providing an elevated concentration of PRP. However, further research is required.

<https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0034-1376692>

Case series of ultrasound-guided platelet-rich plasma injections for sacroiliac joint dysfunction.

CONCLUSIONS:

Platelet-rich plasma therapy exhibits clinical usefulness in both pain reduction and for functional improvement in patients with chronic SI joint pain. The improvement in joint stability and low back pain was maintained at 1- and 4-years post-treatment.

<http://content.iospress.com/articles/journal-of-back-and-musculoskeletal-rehabilitation/bmr734>

A Pilot Study on the Effectiveness of Platelet-Rich Plasma and Debridement for the Treatment of Nonhealing Fistulas in Spinal Cord–Injured Patients.

CONCLUSION:

The authors' results suggest that the application of PRP in combination with debridement is an effective therapy option and good alternative to recurrent surgical interventions for treating nonhealing fistulas resulting from the surgical closure of PrUs.

http://journals.lww.com/aswcjournal/Abstract/2015/03000/A_Pilot_Study_on_the_Effectiveness_of.8.aspx

PRP treatment for muscles

Single dose of intra-muscular platelet rich plasma reverses the increase in plasma iron levels in exercise-induced muscle damage: A pilot study.

CONCLUSION:

Our results indicate that acute exhaustive exercise increases muscle damage markers, including plasma Fe, IBC, and ferritin levels. PRP administration improved the inflammatory response by reversing the observed increase in Fe levels and may have a role to play in the recovery of exercise-induced muscle damage. Evidently, intramuscular PRP injection had no effect on CK levels, indicating that it is not myotoxic.

<http://www.sciencedirect.com/science/article/pii/S2095254615000204>

Single injection of platelet-rich plasma (PRP) for the treatment of refractory distal biceps tendonitis: long-term results of a prospective multicenter cohort study.

CONCLUSION:

US-guided PRP injection seems to be an effective treatment modality for symptomatic refractory distal biceps tendonitis.

<http://www.ncbi.nlm.nih.gov/m/pubmed/25502475/?i=17&from=prp%20elbow>

Does platelet-rich plasma decrease time to return to sports in acute muscle tear? A randomized controlled trial

CONCLUSION:

A single PRP injection combined with a rehabilitation programme significantly shortened time to return to sports compared to a rehabilitation programme only. Recurrence rate was not significantly different between groups.

<https://www.readbyqxd.com/read/27085364/does-platelet-rich-plasma-decrease-time-to-return-to-sports-in-acute-muscle-tear-a-randomized-controlled-trial>

PRP treatment for the shoulder

Platelet-Rich Plasma Treatment With Physical Therapy in Chronic Partial Supraspinatus Tears

CONCLUSION:

PRP seems to be a well-tolerated therapeutic application which has shown encouraging clinical results in patients with chronic partial supraspinatus tears and may be as effective as PT. The standardization of PRP protocols, long-term follow-up and prospective blinded randomized studies should clarify the questions regarding the PRP effectiveness and the durability of clinical improvements.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4601247/>

Effectiveness of Platelet-rich Plasma Injection for Rotator Cuff Tendinopathy: A Prospective Open-label Study.

CONCLUSION:

A single intralesional injection of PRP under ultra-sound guidance resulted in a safe, significant, sustained improvement in pain, function, and MRI outcomes for participants with refractory RCT. This suggests that PRP has the potential to heal the muscle-tendon unit of the rotator cuff at the level of degenerative tissue and may be a primary nonsurgical treatment for refractory RCT. Randomized multidisciplinary effectiveness trials that add ultrasound and validated functional and imaging outcome measures are needed to further assess the effect of PRP for severe RCT compared to current therapy.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3833522/>

PRP treatment for the foot and ankle

Platelet rich plasma versus corticosteroid injection for plantar fasciitis: A comparative study.

CONCLUSION:

PRP is as effective as Steroid injection at achieving symptom relief at 3 and 6 months after injection, for the treatment of plantar fasciitis, but unlike Steroid, its effect does not wear off with time. At 12 months, PRP is significantly more effective than Steroid, making it better and more durable than cortisone injection.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26362235/?i=5&from=prp%20foot>

Long-term beneficial effects of platelet-rich plasma for non-insertional Achilles tendinopathy.

CONCLUSION:

The study shows beneficial effects and low complication rate following of single PRP injections on a large cohort of patients with mid-long-term follow-up. No cases reported Achilles tendon rupture, in contrast to literature, which described CRAT as one of the most common risk factors. The use of a single PRP injection can therefore be a safe and attractive alternative in the treatment of non-insertional CRATs.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26235856/?i=7&from=prp%20foot>

Clinical outcomes of platelet rich plasma (PRP) as an adjunct to microfracture surgery in osteochondral lesions of the talus

CONCLUSION:

PRP as an adjunct to arthroscopic microfracture surgery for the treatment of osteochondral lesions of the talus resulted in improved functional score status in the medium-term. Further studies to determine the long-term efficacy of this approach were warranted.

<http://link.springer.com/article/10.1007/s00167-013-2784-5>

Platelet-Rich Plasma or Hyaluronate in the Management of Osteochondral Lesions of the Talus

CONCLUSION:

Osteochondral lesions of the ankle treated with intra-articular injections of PRP and HA resulted in a decrease in pain scores and an increase in function for at least 6 months, with minimal adverse events. Platelet-rich plasma treatment led to a significantly better outcome than HA.

<http://ajs.sagepub.com/content/40/3/534.short>

Establishing proof of concept: Platelet-rich plasma and bone marrow aspirate concentrate may improve cartilage repair following surgical treatment for osteochondral lesions of the talus

Osteochondral lesions are currently treated predominantly by either attempting to repair the lesion with arthroscopic subchondral microfracture or replacement of the non-viable tissue with an autologous osteochondral graft. The short to medium-term clinical results of these surgeries are positive, however longer-term clinical outcomes, as well as radiographic and arthroscopic findings, indicate that surgeons must improve the quality of regenerative tissue in order to avoid long-term post-operative deterioration of outcome.

PRP and BMAC, with their array of bioactive factors have been shown to improve cartilage regeneration in both *in vitro* and *in vivo* models. They amalgamate two of the three factors of the tissue engineering trifecta, bringing stem cells and growth factors to the site of injury. These biological adjuncts are simple and easy to generate and are not known to cause any adverse clinical event. Additional research is required to analyze the long-term outcomes of employing biological adjuncts in a clinical setting using carefully designed randomized level I clinical trials. As we seek to improve the outcomes of surgical treatments for osteochondral lesions, the body of evidence surrounding PRP and BMAC will grow to encompass long-term clinical outcome studies. Researchers are encouraged to continue investigating these biological adjuncts using rigorous scientific methodology.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3399015/>

Clinical Effects of Platelet-Rich Plasma and Hyaluronic Acid as an Additional Therapy for Talar Osteochondral Lesions Treated with Microfracture Surgery

A Prospective Randomized Clinical Trial

CONCLUSION:

Both PRP and HA injections improved the clinical outcomes of patients who underwent operation for talar OCLs in the midterm period and can be used as adjunct therapies for these patients. Because a single dose of PRP provided better results, we recommend PRP as the primary adjunct treatment option in the talar OCL postoperative period.

<http://m.fai.sagepub.com/content/36/8/891.short>

PRP treatment for wounds

Addition of platelet concentrate to dermo-epidermal skin graft in deep burn trauma reduces scarring and need for revision surgeries

CONCLUSION:

Our findings indicate that DESG engraftment is facilitated by the local addition of platelets and by systemic thrombocytosis. This local interaction leads to the physiological revascularization at 1-3 months. We observed significant elevation of circulating platelets in early stages of engraftment (1-7 days), which normalized over the subsequent 7 and 90 days.

<http://www.ncbi.nlm.nih.gov/m/pubmed/24108222/?i=10&from=platelet%20rich%20plasma%20burn>

Biological approach for the management of non-healing diabetic foot ulcers

CONCLUSION:

PRP intervention is safe and if associated with correct tissue debridement and preparation of the host tissue it may help to decrease the burden of diabetic foot ulcers. Carefully designed randomized clinical trials with special attention to the PRP procedure are needed to assess the efficacy of these interventions.

<http://www.sciencedirect.com/science/article/pii/S0965206X16000292>

Effectiveness of Platelet-Rich Plasma to Enhance Healing of Diabetic Foot Ulcers in Patients With Concomitant Peripheral Arterial Disease and Critical Limb Ischemia

CONCLUSION:

PRP could serve as a useful adjunct during management of diabetic foot ulcers even in diabetic patients with unreconstructable arterial disease.

<http://m.ijl.sagepub.com/content/early/2015/03/19/1534734615575829.abstract>

The growing evidence for the use of platelet-rich plasma on diabetic chronic wounds: A review and a proposal for a new standard care

CONCLUSION:

87.5% of controlled studies found a significant benefit for the adjunction of PRP to treat chronic diabetic wounds. As PRP may be beneficial, we suggest using PRP on diabetic ulcers which remain unhealed after standard treatment.

<http://www.ncbi.nlm.nih.gov/m/pubmed/26019054/?i=8&from=prp%20foot>

Comparison between LR-PRP and LP-PRP

The Effectiveness of Platelet-Rich Plasma in the Treatment of Tendinopathy A Meta-analysis of Randomized Controlled Clinical Trials

RESULTS:

A total of 18 studies (1066 participants) were included. Eight studies were deemed to be at low risk of bias. The most significant outcomes in the PRP groups were seen in those treated with highly cellular leukocyte-rich PRP (LR-PRP) preparations: GPS kit (standardized mean difference [SMD], 35.75; 95% CI, 28.40-43.10), MyCells kit (SMD, 31.84; 95% CI, 17.56-46.13), Prosys kit (SMD, 42.99; 95% CI, 37.73-48.25), and unspecified LR-PRP (SMD, 34.62; 95% CI, 31.69-37.55). When the LR-PRP system types were grouped, there was a strongly positive effect (SMD, 36.38; 95% CI, 34.00-38.77) when compared with leukocyte-poor PRP (SMD, 26.77; 95% CI, 18.31-35.22). In assessing the control groups, there was no clear difference between different types of control injections: saline (SMD, 14.62; 95% CI, 10.74-18.50), local anesthetic (SMD, 15.00; 95% CI, 7.66-22.34), corticosteroid (SMD, 23.82; 95% CI, 10.74-18.50), or dry needling (SMD, 25.22; 95% CI, 21.27-29.16).

CONCLUSION:

There is good evidence to support the use of a single injection of LR-PRP under ultrasound guidance in tendinopathy. Both the preparation and intratendinous injection technique of PRP appear to be of great clinical significance.

<http://m.ajs.sagepub.com/content/early/2016/06/06/0363546516643716.abstract>

PRP contra indications

Autologous Platelet-Rich Plasma Preparations Influence of Nonsteroidal Anti-inflammatory Drugs on Platelet Function

CONCLUSION:

Autologous PRP produced from subjects after NSAID medication shows significantly impaired platelet function and may result in lower quality regarding the content of bioactive compounds.

CLINICAL RELEVANCE:

If required, the administration of NSAIDs should be performed after blood collection for preparation of autologous PRP; otherwise, the therapeutic effect may be limited.

<http://m.ojs.sagepub.com/content/3/6/2325967115588896.long>



Treatment with BMAC

A Systematic Study of the Effect of Different Molecular Weights of Hyaluronic Acid on Mesenchymal Stromal Cell-Mediated Immunomodulation

CONCLUSION:

Using a systematic evaluation, we have shown the immunomodulatory effects of different MWs of native HA in combination with MSCs on the function of lymphocytes and MDMs, both of which are prevalent in OA joints. While hHA had a pro-mitogenic effect on PBLs and Th cells and dampened the anti-proliferative effect of MSCs, the overall effect including the effect on Tregs, macrophages and the secreted microenvironment was an anti-inflammatory one. Importantly, when combined with MSCs, hHA exhibits additive effects on inducing immune-effectors with a more regulatory profile, suggesting that a combination therapy may be more beneficial for the treatment of OA.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0147868>

A multi-center analysis of adverse events among two thousand, three hundred and seventy two adult patients undergoing adult autologous stem cell therapy for orthopaedic conditions.

CONCLUSION:

Lowest rate of adverse events was among those patients receiving BMC injections alone, but the higher rate of AEs for BMC plus adipose and cultured cells was readily explained by the nature of the therapy or the longer follow-up. There was no clinical evidence to suggest that treatment with MSCs of any type in this study increased the risk of neoplasm.

<http://www.ncbi.nlm.nih.gov/m/pubmed/27026621/>