

## *Supplementary Materials for*

# Expert Consensus on the use of autologous platelet-rich plasma in the context of regenerative medicine: moving forward to good clinical practice

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**Supplementary Table 1**  
Studies on PRP therapy for musculoskeletal disorders

Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/ Timing	Results
Paget LDA, <i>et al.</i> [1]	2023	Ankle OA	RCT	100	PRP (Arthrex double-syringe system-Arthrex Medizinische Instrumente GmbH)	2 intra-articular talocrural injections: at inclusion and after 6 weeks	PRP injections did not improve ankle symptoms and function over 52 weeks compared with placebo injections
Di Martino A, <i>et al.</i> [2]	2019	Ankle OA	RCT	192	LR-PRP	3 intra-articular injections	PRP did not provide an overall superior clinical improvement compared with HA
Yurtbay A, <i>et al.</i> [3]	2021	Knee OA	RCT	324	LR-PRP	Multiple injections	Multiple doses of PRP were seen to be more effective than single-dose PRP at 6 and 12 months
Chen X, <i>et al.</i> [4]	2018	Tendon and ligament injuries	Systematic review and meta-analysis	1,937	Different types	Injection	PRP reduced the pain associated with lateral epicondylitis and rotator cuff pathology. No evidence with other tendinopathy
Chu J, <i>et al.</i> [5]	2022	Knee OA	RCT	610	P-PRP	3 injections at 1-week intervals	P-PRP was superior to sham saline
Görmeli G, <i>et al.</i> [6]	2015	Knee OA	RCT	162	PRP	Injection every 7 days	For patients with early OA, multiple (3) PRP injections are useful in achieving better clinical results. For patients with advanced OA, multiple injections do not significantly improve the results of patients in any group
Tan J, <i>et al.</i> [7]	2021	Knee OA	Meta-analysis of 26 RCT	2,430	PRP	Injection	PRP was more effective than HA, and the safety of these 2 treatment options was comparable
McLarnon, M, Heron N [8]	2021	Knee OA	Systematic review and meta-analysis	648	PRP (Different methods)	Intra-articular injections	IPRP injections produced superior outcomes when compared with corticosteroid injections
Raeissadat SA, <i>et al.</i> [9]	2015	Knee OA	RCT	160	PRP (Rooyagen Kit; Arya Mabna Tashkis Corporation)	2 intra-articular injections at 4-week interval	PRP injection was more efficacious than hyaluronic acid injection
Scott A, <i>et al.</i> [10]	2019	Patellar Tendinopathy	RCT	61	LR-PRP LP-PRP	1 injection	A single injection of LR-PRP or LP-PRP was no more effective than saline for the improvement of patellar tendinopathy symptoms
Smith PA [11]	2016	Knee OA	RCT	30	LP-PRP (Arthrex double-syringe system-Arthrex Medizinische Instrumente GmbH)	Injection	PRP was safe and provided quantifiable benefits for pain relief and functional improvement
Dadgostar H, <i>et al.</i> [12]	2021	Rotator cuff tendinopathy	RCT	58	PRP (ROOYA GEN®)	1 injection	Pain and range of motion showed more significant improvement with the use of PRP compared to corticosteroids

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**Supplementary Table 1**

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Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/ Timing	Results
Prodromos CC, <i>et al.</i> [13]	2021	Rotator cuff tendinopathy	Prospective study	68	PRP	Dual injections	PRP injection was a safe and effective treatment
Shen Z, <i>et al.</i> [14]	2024	Rotator cuff tendinopathy	Meta-analysis of RCT	1,359	PRP (Different methods)	Injection	Intraoperative use of PRP reduced the risk of rotator cuff repair failure, improved clinical outcomes, and reduced recurrence rates
A Hamid MS, Sazlina SG [15]	2021	Rotator cuff tendinopathy	Systematic review and meta-analysis	976	PRP (Different methods)	Injection	PRP injection was safe and effective intervention for long-term pain control and shoulder function
Malavolta EA, <i>et al.</i> [16]	2018	Rotator cuff tendinopathy	RCT	54	Liquid PRP prepared by apheresis with autologous thrombin	Application in the tendon-to-bone interface	PRP did not promote better clinical or structural results at 60-month follow-up

PRP: platelet-rich plasma; OA: osteoarthritis; LR-PRP: leukocyte-rich PRP; LP-PRP: leukocyte-poor PRP; P-PRP: pure PRP; HA: hyaluronic acid; RCT: randomized clinical trial.

**Supplementary Table 2**

Studies on PRP therapy for vasculitis and mucositis

Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/Timing	Results
Yi Z, <i>et al.</i> [17]	2021	Cutaneous leukocytoclastic vasculitis	Case report	1	PRP gel	4 times of topical application of PRP	PRP exerted beneficial effects with regard to wound size reduction, and it induced granulation tissue formation
Huber SC, <i>et al.</i> [18]	2021	Behçet's Disease	Prospective pilot study	12	P-PRP	9 applications of 3 mL, over 6 months, with a follow-up of one year.	P-PRP promoted an anti-inflammatory profile characterized by increased Treg cells and decreased activated NK cells and alterations in cytokines. A decrease in the number and time of closure of oral ulcers was observed
Aielli F, <i>et al.</i> [19]	2014	Oral mucositis	Case report	1	Heterologous platelet gel - supernatant	3 times a day	After 12 hours, a dramatic improvement in oral mucositis was observed. Ulcers had become smaller and pink in color, with evidence of healing
Bonfili P, <i>et al.</i> [20]	2017	Oral mucositis	Controlled clinical trial	64	Heterologous platelet gel - supernatant	3 times a day	Improved quality of life compared to the control group
Di Staso M, <i>et al.</i> [21]	2014	Oral mucositis	Case report	1	Heterologous platelet gel - supernatant	4 times a day	Platelet gel repaired damage to the mucosa, blocked the progression of mucositis, reduced the intensity of pain and restored the patient's ability to eat
Pirrello R, <i>et al.</i> [22]	2019	Scleroderma	Prospective open-label study	10	HA and PRP mixture	3 filler injections at an interval of 15 to 20 days	The treatment had significantly improved patients' quality of living

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**Supplementary Table 2**

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Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/Timing	Results
Shetty S, Shenoi SD [23]	2016	Scleroderma	Case report	1	PRF	12 applications in 3 months	A significant improvement was noted both in ulcer healing and pain severity
Giuggioli D, et al. [24]	2012	Scleroderma	Pilot open study	12	Platelet gel	Applications in the wound bed twice weekly for 2 weeks, then once a week for 12 weeks	Skin ulcers improved in 10/12 patients, with complete healing in 4. Wound size reduced and patient's quality of life markedly improved
Paganelli A, et al. [25]	2023	Genital Lichen Sclerosus	Review	272	PRP	Infiltration	Reduction of itching, pain, and discomfort, and positive impact on the structural changes associated with Lichen Sclerosus
Kang MJ, et al. [26]	2023	Sjögren's syndrome	RCT	38	PRP and AS eye drops	1 drop per eye 6 times daily in both eyes with an interval of 2 h between drops for 12 weeks	Both AS and PRP eye drops are effective, without a significant difference. However, the preparation time of PRP is shorter than that of AS
Gabusi A, et al. [27]	2024	Autoimmune blistering diseases	Pilot study	9	Heterologous PRP	Topical applications once a week for 2 months	All patients reported a reduction in pain whereas reduction in the oral disease severity score was observed in 89% of patients

PRP: platelet-rich plasma; AS: autologous serum; HA: hyaluronic acid; P-PRP: pure PRP; RCT: randomized clinical trial.

**Supplementary Table 3**

Studies on PRP therapy for uro-andrological disorders

Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/Timing	Results
Matz EL, <i>et al.</i> [28]	2018	Urologic diseases	Pilot study	17	PRF matrix	Mean receipt of 2.1 injections per patient	Treatment was safe and feasible
Geyik S [29]	2021	ED	Retrospective study	93	PRP	1 injection for 3 times with an interval of 10-14 days	Treatment was effective and safe in prolonging the intravaginal ejaculatory latency time
Poulios E, <i>et al.</i> [30]	2021	ED	Double-blind, randomized, placebo-controlled clinical trial	30	PRP	Intracavernous injection twice, with an interval of 1 month	Treatment was safe and effective
Taş T, <i>et al.</i> [31]	2021	ED with metabolic syndrome	Prospective study	31	PRP	Intracavernous injection 3 times with an interval of 15 days	Treatment provided short-term improvement
Wong SM, <i>et al.</i> [32]	2021	ED	Prospective single-arm study	30	PRP	3 sessions of intracavernosal injection	Treatment significantly improved ED
Zaghloul AS, <i>et al.</i> [33]	2021	ED	Prospective pilot study	34	PRP	Intra-corporeal injection once per week for 2 months	Improvement of erectile function
Zaghloul AS, <i>et al.</i> [34]	2022	ED	Prospective study	48	PRP	3 intracavernosal injection with an interval of 1 month	Improvement of erectile function and erection hardness
Schirmann A, <i>et al.</i> [35]	2022	ED	Pilot study	15	PRP (P-shot®)	3 intra-cavernous injections with an interval of 15 days	Improvement of erectile function
Shaher H, <i>et al.</i> [36]	2023	ED	RCT	100	PRP	3 intra-cavernous injections with an interval of 15 days	Treatment significantly improved ED
Francomano D, <i>et al.</i> [37]	2023	ED	Open-label, single arm, prospective non-randomized study	150	PRP	Intra-cavernous injection	Treatment was safe and effective and identified a predictive value for the mean platelet volume
Masterson TA, <i>et al.</i> [38]	2023	ED	RCT	61	PRP	2 intra-cavernous injections with an interval of 1 month	Treatment was safe
Virag R, <i>et al.</i> [39]	2017	PD	Prospective study	90	PRP-HA	Intralesional injections 4 times within 2 months	Treatment improved significantly penile deformation and thickening of the tunica albuginea
Achraf C, <i>et al.</i> [40]	2022	PD	Prospective study	65	PRP	Average of 6.1 intralesional injections	Positive results in terms of treatment simplicity, safety, efficacy and patient satisfaction
Chu KY, <i>et al.</i> [41]	2023	PD	Phase 2 randomized, placebo-controlled crossover trial	23	PRF matrix	2 intralesional injections with an interval of 2 weeks	Treatment was safe
Zugail AS, <i>et al.</i> [42]	2024	PD	Pilot study	54	PRP	6 intralesional injections with an interval of 4 weeks	Improvement in penile curvature
Alshuaibi M, <i>et al.</i> [43]	2024	PD	Prospective case series	2,023	PRP	Injection	Improvement in penile curvature

PRP: platelet-rich plasma; ED: erectile dysfunction; PD: Peyronie's disease; PRF: platelet-rich fibrin; HA: hyaluronic acid; RCT: randomized controlled trial.

**Supplementary Table 4**  
 Studies on PRP therapy for gynecological disorders and female infertility

Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/Timing	Results
Saleh DM, Abdelghani R [44]	2022	Postmenopausal vulvovaginal atrophy	Pilot study	47	PRP	2 sessions of injection with 1 month interval.	Treatment was safe and effective
Mardiyan Kurniawati E, et al. [45]	2024	Pelvic floor disorders	Systematic review	600	PRP	Injection	PRP can be used to manage pelvic floor disorders
Tedesco M, et al. [46]	2022	Genital lichen sclerosis	Prospective study	94	PRP	1 infiltration every 15 days, for 3 times	Treatment improved patient quality of life and sexual function in both genders
Behrangi E, et al. [47]	2024	Lichen planopilaris	RCT	48	PRP	3 sessions of PRP injection monthly	Treatment was well tolerated and effective
Dankova I, et al. [48]	2023	FSD and SUI	Systematic review	327	PRP	FSD: PRP injection into the distal anterior vaginal wall once a month for 3 months. SUI: PRP injection into the periurethral area once a month for 3 months	The level of examined evidence was low
Grigoriadis T, et al. [49]	2024	SUI	RCT	50	PRP	2 injections at 3 levels of the urethra at 4- to 6-week intervals	Treatment improved SUI symptoms with an excellent safety profile
Athanasίου S, et al. [50]	2021	SUI	Prospective pilot study	20	PRP	2 injections into the lower one third of the anterior vaginal wall at 4- to 6-week intervals	Treatment was safe and effective
Jiang YH, et al. [51]	2021	SUI	Proof-of-concept clinical trial	35	PRP	4 urethral injections at monthly intervals	Treatment was safe and effective
Saraluck A, et al. [52]	2024	SUI	RCT	60	PRP+pelvic floor muscle training	2 injections with a 1-month interval	Treatment improved SUI symptoms
Long CY, et al. [53]	2021	SUI	Pilot study	20	PRP (Regenlab, Switzerland)	Injection into the anterior vaginal mucos, monthly treatment for 3 months.	Treatment improved SUI symptoms
Huniadi A, et al. [54]	2023	Endometrial thickness and infertility	Prospective single-arm self-control study	102	PRP	Intrauterine infusion	Enhancement of endometrial proliferation, embryo implantation rate and clinical pregnancy rate
Chen PF, et al. [55]	2024	Thin endometrium	Self-controlled case series study	11	PRP	Infusion	Significant increase of the median endometrial thickness
Chang Y, et al. [56]	2023	Intrauterine adhesions	Time-series-based self-controlled study	12	PRP	Perfusion once a month	Treatment improved the endometrial environment
Efendieva Z, et al. [57]	2023	Thin endometrium	RCT	115	PRP	1 intraendometrial injection +/- autologous endometrial cells	Enhanced endometrial receptivity with improved outcomes in assisted reproductive technology programs
Fraidakis M, et al. [58]	2023	Ovarian insufficiency	Retrospective study	469	PRP	Intraovarian injection	Significant increases in normal values of FSH and E2

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## Supplementary Table 4

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Authors	Year	Disease	Type of study	N. of individuals	PRP type	Treatment/Timing	Results
Barrenetxea G, <i>et al.</i> [59]	2024	Poor ovarian reserve	RCT	60	PRP	Intraovarian injection	Treatment increased the number of retrieved oocytes without increasing the quality of developed blastocysts.
Éliás M, <i>et al.</i> [60]	2024	Poor ovarian reserve	Systematic review and meta-analysis	2,256	PRP	Injection	Improvement in the main fertility parameters

PRP: platelet-rich plasma; FSD: female sexual dysfunction; SUI: stress urinary incontinence; RCT: randomized controlled trial.

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