## SEARCH STRATEGY

* We applied a clinical trials filter to the following keywords:

**PubMed**

("Platelet-Rich Plasma"[Title/Abstract] OR PRP[Title/Abstract]) AND (knee[Title])

---

**Scopus**

( ( TITLE ( "Platelet-Rich Plasma" OR prp ) OR ABS ( "Platelet-Rich Plasma" OR prp ) ) )

AND ( TITLE ( knee ) )

---

**Embase**

'platelet-rich plasma':ti,ab OR prp:ti,ab

knee:ti

#1 AND #2 AND [embase]/lim

**Supplementary Table 1. Preparation of platelet-rich plasma in the included studies**

| Study | PRP preparation |
|---|---|
| Görmeli, 2017 | A total of 150 mL of venous blood, collected with 21 mL of sodium citrate, was obtained from the antecubital vein. After two centrifugations (first at 1500 rpm for 6 min, then at 3500 rpm for 12 min), 20 mL of PRP was prepared and divided into four 5 mL units. One unit was sent for platelet count and bacteriological tests, one was injected within 2 hours, and two were stored at -30 °C. There was no significant difference in platelet concentration between the PRP groups (PRP3: 1118,000 µL; PRP1: 1152,000 µL). Injections were given every 7 days in all groups, with 1 mL of CaCl2 added to activate the platelets. For the second and third injections in the PRP3 group, samples were thawed at 37 °C for 30 minutes before administration. |
| Kavadar, 2015 | To prepare 4–5 cc of PRP with a platelet concentration of 4–6 times normal, a 30–40 cc blood sample was collected from the antecubital vein into a sterile sodium citrated tube using an 18G needle. About 1 mL of whole blood was set aside for a complete blood count. The blood was then centrifuged first at 1,800 rpm for 15 minutes to separate erythrocytes, followed by 3,500 rpm for 5 minutes to concentrate the platelets, yielding 4–5 cc of leukocyte-containing PRP. Approximately 0.5 cc of PRP was collected for platelet counting, and finally, 0.0425 mL of 10% |

| | |
|---|---|
| | calcium chloride was added per 1 mL of PRP to activate the platelets. |
| Lewis, 2022 | NA |
| Patel, 2013 | The PRP for injection was prepared by the Department of Transfusion Medicine, PGIMER, Chandigarh, India. About 100 mL of venous blood was drawn aseptically from the anticubital vein into a bag with CPD-A1 anticoagulant. The blood was then transferred to two sterile tubes and centrifuged at 1500 rpm for 15 minutes to separate the PRP from residual red blood cells and the buffy coat. This process was entirely performed inside a biosafety cabinet. The PRP was extracted, filtered through a leucocyte filter, and assessed for platelet count before injection in a 10-mL syringe (approximately 8 mL per knee). The total leucocyte count was zero in the final PRP, classified as type 4B per the Mishra classification. The average platelet count achieved was 310.14 3 $10^3$/mL, with an injected quantity of 238.56 3 $10^7$ platelets per knee. Participants were unaware of the blood volume extracted; the control group had 5 mL for routine testing. |
| Simental-Mendía, 2019 | A sample of 45 mL of venous blood was collected from the patient in vacutainer tubes containing 0.129 M sodium citrate. An additional tube with EDTA was used for initial platelet counting. The samples were centrifuged at 1800 rpm for 5 minutes to separate the blood components. The plasma was carefully transferred to a sterile tube without disturbing the |

| | |
|---|---|
| | buffy coat and centrifuged again at 3400 rpm for 5 minutes to concentrate the platelets. The platelet-poor plasma was discarded, and 5 mL of PRP was collected and transferred to a sterile glass tube for final counting. All procedures were performed in a Class II Type A2 laminar flow biosafety cabinet to prevent contamination. Before use, the PRP was activated with 0.75 mL of a 10% calcium gluconate solution. |
| Subramanyam, 2021 | The PRP was prepared by centrifuging 8 mL of blood (with 2.7 mL ACD-A anticoagulant) for 5 minutes at 1,500 g and 3,500 rpm, yielding 4 mL of PRP with an 80% platelet recovery and a significant reduction in granulocytes (>95%). This protocol did not require a second centrifugation. Before the study, we validated it by preparing PRP from 15 healthy volunteers after ensuring normal platelet and leucocyte counts. The samples met established standards for quality. The leucocyte-poor PRP was classified as P2 Bb per the PAW classification. |
| Tavassoli, 2019 | The PRP preparation was performed using the Rooyagen kit (Arya Mabna Tashkhis Corporation, Tehran, Iran). About 40 mL of venous blood was drawn from the antecubital vein with an 18-gauge needle, and 5 mL of acid-citrated-dextrose was added as an anticoagulant. The blood was centrifuged at 1500 rpm for 15 minutes, separating it into two layers: RBC sediment and plasma. The plasma was further centrifuged at 3500 rpm for 7 minutes, resulting in two new layers with the lower layer containing platelets. The upper layer was removed, and the |

| | |
|---|---|
| | remaining 4-6 mL was mixed with the platelet sediment, yielding the final 4-6 mL of PRP. The quality and quantity were assessed using the Sysmex KX 21 analyzer (Sysmex Corporation, Kobe, Japan). |
| Uslu Güvendi, 2018 | Peripheral venous blood (18 mL) was collected from patients in the PRP groups using an 18 gauge needle and 2 mL citrate dextrose. The blood was centrifuged for five minutes at 3,600 rpm, separating it into plasma, buffy coat (platelets and leucocytes), and erythrocytes. A platelet count was performed on the thrombocyte-rich plasma samples. Before centrifugation, the platelet count was 245 × 10^9/L and WBC count was 7.45 × 10^9/L. After centrifugation, the platelet count rose to 875 × 10^9/L, while the WBC count increased to 8.67 × 10^9/L. |
| Yurtbay, 2022 | A total of 32 ml of peripheral venous blood was drawn from the antecubital vein under aseptic conditions to avoid damaging platelets. Blood was collected in a sterile tube, yielding 8 ml of PRP (1 ml from each tube), prepared by the same study nurse for each patient. From the final 8 ml of PRP, 5 ml was injected into the patient's knee through the anterolateral portal, while 3 ml was sent to the lab for platelet and leukocyte measurement. For activation, 50 µl of 5.5% calcium chloride was added to 1 ml of PRP. The separation procedure took place inside a biosafety cabinet, resulting in leukocyte-rich PRP with 9000–11,000 leukocytes/µL and an average platelet count of 128 × |

| | |
|---|---|
| | 10^5/μl. Following the injection, patients were monitored for 15–20 minutes for any side effects. |
| Zhuang, 2024 | PRP is obtained through secondary centrifugation using aseptic techniques. A mixture of 2 ml of sodium citrate anticoagulant and 18 ml of patient blood is drawn from the median elbow vein. This mixture undergoes low-speed centrifugation at 200 g for 10 minutes, followed by another 20 minutes at the same speed, separating the blood into three layers. Approximately 3/4 of the upper plasma layer is then removed, leaving around 4 ml of PRP, which is extracted using a sterile 5 ml syringe. Blood and PRP samples are regularly collected and analyzed with a blood analyzer to ensure proper PRP preparation. The platelet concentration in the PRP is about four times higher than the baseline level, with an initial concentration of 235.61±38.47×10^9/L and an average of 928.57±39.78×10^9/L in the PRP samples containing leukocytes and a small amount of red blood cells. |