

INPLASY PROTOCOL

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There is no conflicts of interest.

A systematic review and meta-analysis of the efficacy of platelet-rich plasma injection in the treatment of frozen shoulder

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Review question / Objective: The aim of this meta-analysis is to evaluate the efficacy and safety of Platelet Rich Plasma for frozen shoulder.

Condition being studied: Frozen shoulder ,and its treatment using Platelet-rich plasma(PRP)therapy.PRP is a component of plasma containing higher concentration of platelet than whole blood, which is obtained by centrifugation of whole blood collected from the patient. It can Improve shoulder movement, quality of life and visual analogue scale (VAS).

Information sources: We will search articles in five electronic database including PubMed, EMBASE, Web of science, Elsevier and Cochrane Library. All the English publications until 20 June 2020 will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial search.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 June 2020 and was last updated on 25 June 2020 (registration number INPLASY202060097).

INTRODUCTION

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METHODS

Search strategy: Pubmed :Search (((("Bursitis"[Mesh]) OR (((((((((((((((("Frozen Shoulder"[Title/Abstract]) OR "Frozen Shoulders"[Title/Abstract]) OR "Shoulder, Frozen"[Title/Abstract]) OR "Adhesive Capsulitis of the Shoulder"[Title/Abstract]) OR "Shoulder Adhesive Capsulitis"[Title/Abstract]) OR "Adhesive Capsulitides, Shoulder"[Title/Abstract]) OR "Adhesive Capsulitis, Shoulder"[Title/Abstract]) OR "Capsulitides, Shoulder Adhesive"[Title/Abstract]) OR "Capsulitis, Shoulder Adhesive"[Title/Abstract]) OR "Shoulder Adhesive Capsulitides"[Title/Abstract]) OR "Capsulitis"[Title/Abstract]) OR "Capsulitides"[Title/Abstract]) OR "Pes Anserine Bursitis"[Title/Abstract]) OR "Bursitides, Pes Anserine"[Title/Abstract]) OR "Bursitis, Pes Anserine"[Title/Abstract]) OR "Pes Anserine Bursitides"[Title/Abstract]) OR "Adhesive Capsulitis"[Title/Abstract]) OR "Adhesive Capsulitides"[Title/Abstract]) OR "Capsulitides, Adhesive"[Title/Abstract]) OR "Capsulitis, Adhesive"[Title/Abstract]))) AND (((((((("Plasma, Platelet-Rich"[Title/Abstract]) OR "Platelet Rich Plasma"[Title/Abstract]) OR "plasma"[Title/Abstract]) OR "platelet-rich"[Title/Abstract]) OR "platelet gel"[Title/Abstract]) OR "platelet plasma"[Title/Abstract]) OR "PRFM"[Title/Abstract]) OR "platelet-rich fibrin matrix"[Title/Abstract])).

Participant or population: Adults with depression (as diagnosed by a clinician, or using any recognized diagnostic criteria) will be included.

Intervention: Platelet Rich Plasma.

Comparator: Procaine or corticosteroid or ultrasound guided SGB with ketamine.

Study designs to be included: Randomized clinical trials will be included irrespective of blinding, publication status or language.

Eligibility criteria: The inclusion criteria were age over 18 years, shoulder pain for at least one month with limited ROM in at least one direction.

Information sources: We will search articles in five electronic database including PubMed, EMBASE, Web of science, Elsevier and Cochrane Library. All the English publications until 20 June 2020 will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial search.

Main outcome(s): The primary outcome measure was Shoulder Pain .VSA and QuickDASH is a tool to assess pain and disability in patients with shoulder pain, which was extensively used in studies involving frozen shoulder.

Quality assessment / Risk of bias analysis: Two reviewers will independently assesses the quality of the selected studies according to the Cochrane Collaboration's tool for randomized controlled trials .Items will be evaluated in three categories:Low risk of bias, unclear bias and high risk of bias .The following characteristics will be evaluate :Random sequence generation(selection Bias)Allocation concealment (selection bias)Binding of participants and personnel(performance bias) Selective reporting (reporting bias) Other biases Results from these questions will be graphed and assessed using Review Manager5.3.

Strategy of data synthesis: Risk ratio(RR) for both fixed and random effects models(weighting by inverse of variance) will be used. A continuity correction will also be used for cells with zero values. Between-study heterogeneity will be assessed using the I^2 (CochranQ) and 1 statistics. According to the Cochrane handbook, the I^2 will be considered non-important(60%)。 Results will be assessed using forest plots and presented as RRs for the main outcome and secondary outcomes. An influence analysis will be

performed to ascertain the results of the meta-analysis by excluding each of the individual studies. Publication bias will be assessed by a funnel plot for meta-analysis and quantified by the Egger method. Statistical analysis will be conducted using STATA software for Mac v15.0 (Stata Corp, College Station, Texas) [module "meta"] and Rstudio v1.0.136 (The R Foundation for Statistical Computing) [package "meta v4.2"1].

Subgroup analysis: We will consider subgroups such as jurisdiction, clinic type, and location

Sensibility analysis: When the heterogeneity is high (such as $I^2 > 50\%$), the random effect model can be used, and the fixed effect model is used instead. There are 6 documents (1-6) for an outcome indicator, or whether the heterogeneity has changed after removing 1-6 separately (record the changes in the combined effect values WMD and RR). If the heterogeneity changes after finding the first article, then this may be the source of heterogeneity.

Language: No.

Country(ies) involved: China.

Keywords: Platelet Rich Plasma, frozen shoulder.

Contributions of each author:
Author 1 - Shanzi Yu.