INPLASY PROTOCOL

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest: None.

Comparative Efficacy and Safety of Injection therapies for Knee osteoarthritis: a systematic review and Bayesian network meta-analysis protocol

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Review question / Objective: There are many injection methods for the treatment of knee osteoarthritis, but there is no comprehensive comparison, based on the frequency methods.

Condition being studied: All interventions, including at least two RCT injections for knee osteoarthritis, should be selected, with injections limited to botulinum toxin(BT), corticosteroid(CS) , hyaluronate(HYA), peppering technique(PEP), placebo and 'wait and see' （PLA） , platelet-rich plasma(PRP).

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 August 2020 and was last updated on 23 August 2020 (registration number INPLASY202080099).

INTRODUCTION

Review question / Objective: There are many injection methods for the treatment of knee osteoarthritis, but there is no comprehensive comparison, based on the frequency methods.

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technique(PEP), placebo and 'wait and see' （PLA）, platelet-rich plasma(PRP).

METHODS

Search strategy: Comprehensive searches of RCTS on injection therapy for knee osteoarthritis were conducted in three English databases PubMed, Cochrane Library, Embase and two Chinese databases (CNKI) and Wanfangs, and the time limit was from August 2020 for each database.

Participant or population: According to the diagnostic criteria of knee osteoarthritis stipulated in Guidelines for the "Diagnosis and Treatment of Osteoarthritis"[17], "Practical Osteology"[18], "American College of Rheumatology(1987)"[19], etc., the main contents are as follows: Recurrent knee pain in the past one month; Accompanied by any of the following at least two cases. X-rays in standing or weight-bearing positions showed narrowing of joint space, subchondral osteosclerosis or cystic changes, and joint marginal osteophyte formation; >, 50 years old; Get up in the morning joint stiffness time is less than 30 minutes; There is a sound of bone friction or bone friction when the joints move.

Intervention: The interventions under study should include at least two different injection therapeutics, limited to botulinum toxin(BT), corticosteroids (CS), Hyaluronate (HYA), peppering technique(PEP), placebo and 'wait and see' (PLA), and bright-rich plasma(PRP).They were excluded from ozone therapy, Autologous Blood (AB), glycosaminoglycan polysulfate(GSGPS), Prolotherapy (PRO), stem cell therapy, etc.

Comparator: The interventions under study should include at least two different injection therapeutics, limited to botulinum toxin(BT), corticosteroids (CS), Hyaluronate (HYA), peppering technique(PEP), placebo and 'wait and see' (PLA), and bright-rich plasma(PRP).They were excluded from ozone therapy, Autologous Blood (AB),

glycosaminoglycan polysulfate(GSGPS), Prolotherapy (PRO), stem cell therapy, etc.

Study designs to be included: All interventions, including at least two RCT injections for knee osteoarthritis, should be selected, with injections limited to botulinum toxin(BT), corticosteroid(CS) , hyaluronate(HYA), peppering technique(PEP), placebo and 'wait and see' （PLA）, platelet-rich plasma(PRP).

Eligibility criteria: All interventions, including at least two RCT injections for knee osteoarthritis, should be selected, with injections limited to botulinum toxin(BT), corticosteroid(CS) , hyaluronate(HYA), peppering technique(PEP), placebo and 'wait and see' （PLA）, platelet-rich plasma(PRP). 2.1.2. Type of participant. According to the diagnostic criteria of knee osteoarthritis stipulated in Guidelines for the "Diagnosis and Treatment of Osteoarthritis"[17], "Practical Osteology"[18], "American College of Rheumatology(1987)"[19], etc., the main contents are as follows: Recurrent knee pain in the past one month; Accompanied by any of the following at least two cases. X-rays in standing or weight-bearing positions showed narrowing of joint space, subchondral osteosclerosis or cystic changes, and joint marginal osteophyte formation; >, 50 years old; Get up in the morning joint stiffness time is less than 30 minutes; There is a sound of bone friction or bone friction when the joints move.

Information sources: PubMed, the Cochrane Library,Embase, the China National Knowledge Infrastructure (CNKI) , Wanfang Database.

Main outcome(s): Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is used to evaluate the structure and function of the knee from the three aspects of symptoms and signs of pain, stiffness and joint function, and evaluate the treatment effect through the score changes before and after treatment.

Additional outcome(s): 1. visual analog scale (VAS) for pain, A ruler marked with a number from 1 to 10 indicates pain, 0 is painless, and 10 is the ultimate tolerable pain. The patient marks his or her own pain on the ruler. 2. Lysholm knee score to make a preliminary assessment from the levels of different levels of exercise function, the rating is more inclined to the daily life activities. 3. Aims2-s is used to evaluate patients from five aspects, including body, symptoms and emotions. There are a total of 20 items, which are often used to evaluate patients' quality of life. 4. The incidence rate of adverse events.

Quality assessment / Risk of bias analysis: Microsoft Excel 2016 was used to establish information data extraction table, and pre-extraction was carried out to determine the feasibility of the table. Then, two team members (YT and YSF) will independently extract the following information after training: 1. basic information: title, author, country, year, language, etc. 2. Baseline information: gender, age, number of persons, country, diagnostic criteria, etc 3. Methodological information: grouping method, allocation concealment, blind method, result bias, etc. 4. Intervention measures: treatment measures, dosage, treatment time, frequency, etc. 5. Results: Data of primary results and secondary results. After the work is completed, the results are cross-checked and, if there are differences, a group discussion is conducted to determine the final result.

Strategy of data synthesis: Two team members (YT and YSF) used Stata statistical software (version 13.0, Stata Corporation, College Station, Texas, the United States) for analysis.A frequency model was used for random effect network meta-analysis to compare the differences between different interventions.

Subgroup analysis: If the analysis showed significant heterogeneity, the reason was analyzed according to the PICOS principle, and STATA 14.0 was used for subgroup analysis.

Sensibility analysis: When sufficient studies are available, sensitivity analysis will be used to assess the robustness of the meta-analysis based on methodological quality, sample size and missing data.

Country(ies) involved: China.

Keywords: knee osteoarthritis, injection therapy , protocol, systematic review.

Contributions of each author:
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Author 3 - Lin Jiao.