INPLASY PROTOCOL

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None declared.

Robot-assisted percutaneous sacroiliac screw versus traditional fluoroscopy-assisted for posterior pelvic ring injuries: a systematic review and meta-analysis

Guo, J[1]; Jia, QY[2]; Zhang, J[3]; Abudusalamu, ALMJ[4]; Wu, T[5]; Wang, YB[6]; Ma, C[7].

Review question / Objective: **The purpose of this study is to explore whether the effect of percutaneous sacroiliac screw fixation of posterior pelvic ring injuries assisted by robot is better than that of traditional fixation.**

Condition being studied: **With the development of science and technology, the application of orthopaedic robot is more and more recognized, but at present, orthopedic robot is widely used in spine and joint surgery, but there are few reports on the application of robot-assisted minimally invasive therapy in trauma orthopaedics. At present, China has developed a robot TiRobot suitable for spinal surgery and orthopaedic trauma, which brings a new direction for the treatment of orthopedic trauma. The purpose of this study is to explore whether the therapeutic effect of percutaneous sacroiliac screw fixation on the injury of the posterior ring of the pelvis assisted by robot is better than that of screw fixation under traditional fluoroscopy. Referring to the literature, it is found that there are many articles published in this area, but it is a pity that the only meta-analysis on the injury of the posterior ring of pelvis fixed by robot-assisted percutaneous sacroiliac screw contains only English literatures, not Chinese literatures. Based on this, we intend to conduct a meta-analysis to explore whether the effect of percutaneous sacroiliac screw fixation on the injury of the posterior ring of the pelvis assisted by robot is better than that of screw fixation under traditional fluoroscopy.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 August 2022 and was last updated on 21 August 2022 (registration number INPLASY202280078).

INTRODUCTION

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METHODS

Participant or population: Patients with injury of posterior ring of pelvis.

Intervention: Robot-assisted fixation.

Comparator: Traditional fluoroscopy-assisted traditional fixation.

Study designs to be included: All randomized and non-randomized controlled trials comparing robot-assisted percutaneous sacroiliac screw fixation and traditional fluoroscopic screw fixation in the treatment of pelvic posterior ring injuryAll randomized controlled trials (RCTs) and non-randomized controlled trials (nRCTs).

Eligibility criteria: Patients in this study were diagnosed as pelvic posterior ring injury by medical imaging examination.

Information sources: PubMed、Web of Science、Embase、Cochrane Library, CNKI、Wanfang database、VIP and so on.

Main outcome(s): Operative duration, intraoperative bleeding、frequency of intraoperative drilling、frequency of intraoperative fluoroscopy、Intraoperative fluoroscopy duration、healing time, Majeed score and so on.

Quality assessment / Risk of bias analysis: Using Newcastle-Ottawa Scale (NOS) to evaluate the non-randomized controlled trials（nRCTs）. Using the Cochrane Handbook for Systematic Reviews of Interventions to evaluate the randomized controlled trials（RCTs）.

Strategy of data synthesis: Meta-analysis was performed with RevMan 5.3 software. For continuous data, we will analyse mean difference or standardised mean difference with 95% CI, depending on whether the same unit of measurement was used. A p value of less than 0.05 will be considered to be statistically significant. Sensitivity analysis will be used to assess the stability of the meta-analysis results.

Subgroup analysis: Subgroup analysis according to demand.

Sensitivity analysis: Using Stata software for sensitivity analysis, and respond to the sensitivity of the article by deleting one of the articles.

Country(ies) involved: China.

Keywords: Robot-assisted; pelvic ring injury; Percutaneous.

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