INPLASY PROTOCOL

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None declared.

Different spine tumor pathology and risk of venous thrombosis : systematic review and meta-analysis

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Review question / Objective: **The aim is provide a comprehensive overview of the risk of venous thrombosis in different spine tumor pathology.**

Condition being studied: **Venous thromboembolism, including deep venous thrombosis and pulmonary embolism, is an important cause of readmission, prolonged hospital stay and unexpected death of in-hospital patients. It has become a serious problem faced by hospital managers and clinical medical staff. However, there are few studies on the occurrence of VTE in different spine tumor pathology, a study to analysis the situation of this disease is needed.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 March 2023 and was last updated on 30 March 2023 (registration number INPLASY202330121).

INTRODUCTION

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METHODS

Search strategy: We will search articles in four electronic database including PubMed, EMBASE,Web of science and Cochrane Library. All the English publications until 23 March 2023 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, Publications with at least 10 events in total were eligible.

Participant or population: Spine tumor patient diagnosed by postoperative pathology.

Intervention: Different spine tumor pathology.

Comparator: Patients included in the analysis were divided into positive and control groups based on thrombotic events. The criteria for inclusion in the positive group are:(1) Lower limb venous ultrasound diagnosis of VTE; (2) VTE diagnosed by CTPA+CTV; (3) Exclude old thrombosis indicated by imaging reports.

Study designs to be included: Observationsal studies are included irrespective of publication status or language.

Eligibility criteria: There is no any additional inclusion or exclusion criteria not defined in the PICOS section.

Information sources: We will search articles in four electronic database including PubMed, EMBASE,Web of science and Cochrane Library.

Main outcome(s): The primary outcome of interest was a fatal or non-fatal first event of venous thrombosis with the main focus on deep venous thrombosis or pulmonary embolism.

Quality assessment / Risk of bias analysis: Two researchers independently extracted the data, which included the name of the original author, the year of publication, the country of origin of the subjects, and information on numerous inclusion indicators indicated in the inclusion criteria. If there are disagreements, they must be handled by conversation; if the dispute cannot be resolved, the third researcher must be consulted. Two researchers extracted the data independently, including the first author's name, the year of publication, the country of the study population, and the details on numerous inclusion indicators indicated in the inclusion criteria. If there are disagreements, they must be handled by conversation; if the dispute cannot be resolved, the third researcher must be consulted.

Strategy of data synthesis: For meta-analysis, Review Manager 5.3 software was employed. The analysis statistics were odds ratio (OR) or relative risk (RR); the measurement data analysis statistics were weighted mean difference (WMD) or standard- ized mean difference (SMD), and each effect quantity was given by a 95% confidence interval (95% CI). The Q test and I2 were used to quantify the heterogeneity of the research. When P > 0:1 and I2 > 50%, it is assumed that the heterogene- ity is not significant, and the fixed effect model is used to com- bine the data. When P < 0:1, which is 50%, it is assumed that the heterogeneity is substantial, and the fixed effect model is used to integrate the data. The model with a random effect is used, and the cause of heterogeneity is identified as thoroughly as feasible for subgroup analysis. If the reason for heterogene- ity cannot be determined, the random effect model is utilized in meta-analysis. There was a statistically significant difference between the two groups (P < 0:05).

Subgroup analysis: Two subgroup analyses will also be undertaken: The first to assess the relative risk between primary Tumor and metastasis ; The second to investigate the relative risk between spine tumor and intramural extra medullary tumor.

Sensitivity analysis: We performed sensitivity analyses according to funding

source, study design, and method of diagnosis confirmation. In cohort studies, the risk estimate for spine tumor was lower than the risk for metastasis in case-control study. All risk estimates were higher in studies with objectively confirmed venous thrombosis.

Country(ies) involved: China.

Keywords: Venous thrombosis, Spine tumor, Pathology.

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