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Clinical Features and Outcomes of Pulmonary Artery Sarcoma： A systematic literature review

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Data extraction.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 April 2024 and was last updated on 03 April 2024.

INTRODUCTION

Review question / Objective Evaluate the clinical characteristics, imaging findings, laboratory features, treatment modalities, and prognosis of pulmonary artery sarcoma.

Condition being studied Primary Pulmonary Artery Sarcoma (PAS) is a rare malignant tumor, often originating from mural layer of the pulmonary artery. Additionally, PAS tends to present with subtle symptoms in the early stages, and its imaging and laboratory findings can mimic other pulmonary diseases, leading to common misdiagnosis. Currently, there is limited literature on PAS, with most being case reports or single-arm studies. There is a lack of clear consensus on the diagnosis and treatment of PAS. Therefore, we conducted a systematic literature review to comprehensively present the symptoms, laboratory findings, imaging examinations, anatomical characteristics, pathological features, treatment methods, and prognosis of PAS.

METHODS

Participant or population Patients diagnosed with pulmonary artery sarcoma by imaging methods such as CTA, TTE, MRI, etc.

Intervention Patients with PAS.

Comparator Patients without PAS.

Study designs to be included Case reports or cohort studies.

Eligibility criteria Inclusion criteria:Studies classified as case reports or cohort studies.Patients diagnosed with pulmonary artery

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sarcoma by imaging methods such as CTA, TTE, MRI, etc.Studies involving at least 5 patients.Studies reporting clinical characteristics, diagnosis, laboratory tests, treatment modalities, etc., of PAS.Exclusion criteria:Duplicate publications.Studies lacking relevant data.Inaccessible full text.Review articles or letter-type literature.

Information sources We searched PubMed, Cochrane Library, Web of Science, and Embase databases from 2013 to 2023. The search terms included: pulmonary artery, artery, lung, angiosarcoma, neoplasm, leiomyoma, etc.

Main outcome(s) Clinical characteristics, laboratory tests, imaging findings, treatment modalities, prognosis of PAS patients..

Quality assessment / Risk of bias analysis Quality assessment was conducted using the Newcastle-Ottawa Scale (NOS). High-quality studies were defined as those with a score >7, medium-quality studies with a score of 4-7, and low-quality studies with a score <4. Assessment was performed independently by two researchers, with any discrepancies resolved through discussion or consultation with a third party.

Strategy of data synthesis Data analysis was conducted using Stata 16.0. Continuous data were expressed as mean ± standard deviation (SD), while categorical data were presented as frequencies (percentages). Survival data were analyzed using the Kaplan-Meier method, with intergroup differences assessed using the log-rank test. A p-value <0.05 was considered statistically significant.

Subgroup analysis If significant heterogeneity was observed among the included studies, subgroup analysis, sensitivity analysis, meta-regression, etc., were conducted.

Sensitivity analysis Sensitivity analysis was performed by sequentially excluding individual studies to assess the stability of the statistical results.

Country(ies) involved China - Department of Cardiovascular Surgery, The First Hospital of Lanzhou University; The First Clinical Medical College of Lanzhou University.

Keywords Primary pulmonary artery sarcoma; pulmonary endarterectomy; chemoradiotherapy; Survival analysis; Systematic review.

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