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A meta-analysis of melanoma risk in PM/DM patients

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ADMINISTRATIVE INFORMATION

Support - The 1st author.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023110031

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 November 2023 and was last updated on 07 November 2023.

INTRODUCTION

Review question / Objective The aim of this meta-analysis is to examine the association between melanoma and polymyositis/dermatomyositis(PM/DM). in the other word, whether PM/DM patients have a higher risk of melanoma.

Rationale We aim to collect observational studies to investigate the occurrence of melanoma after diagnosis of PM/DM. The association will be estimated via meta analysis.

Condition being studied Most studies focus on relationship between all kinds of tumors and PM/DM. The association between melanoma and PM/DM has not been well investigated.

METHODS

Search strategy The search string will be built as follows: (Polymyositis OR Polymyositides OR

Myositis OR Dermatomyositis OR Polymyositis/ Dermatomyositis) and (melanoma). Both MESH terms and Entry terms are included.

Participant or population Patients diagnosed with PM/DM (include those who got melanoma later).

Intervention The exposure group includes those patients diagnosed with PM/DM and having melanoma as an outcome factor.

Comparator The comparative group includes those patients diagnosed with PM/DM without melanoma.

Study designs to be included Observational studies such as case-control studies or cohort studies.

Eligibility criteria Inclusion criteria:(1) studies containing patients diagnosed with PM/DM and having malignancy as an outcome factor;(2) the publication was in English or Chinese; (3) studies

reporting estimated relative risk using any of following estimates :relative risk (RR), standardized incidence ratio (SIR), hazard ratio (HR), odds ratio (OR) of PM/DM patients with melanoma.Exclusion criteria: (1) conference articles, reviewarticles, editorials, commentaries, hypothesis papers, case reports and letters; (2) multiple publications from thesame population; (3) studies without clear definition of melanoma or PM/DM; and (4) studies with melanoma occurring before PM/DM.

Information sources We will search the following databases:PubMed, Web of Science, EMBASE, and the Cochrane Central Register of Controlled Trials.

Main outcome(s) Estimates of RR/SIR/HR/OR and 95% confidence interval (CI).

Additional outcome(s) None.

Data management Statistical analysis was performed using Review Manager version 5.3 . RR/ SIR/HR/OR were first extracted and then pooled using the inverse variance. Subsequently, the results were displayed on forest plots.

Quality assessment / Risk of bias analysis Newcastle-Ottawa Scale (NOS) was used to assess the risk of bias according to eight items belonging to three categories: (1) study groups selection, (2) comparability of groups, and (3) outcome of interest.

Strategy of data synthesis Q-test (chi square test) and I² test, were used to test the heterogeneity between the research results during analysis. Estimates were summarized by fixed-effects or random effects models, according to the results of heterogeneity tests. Publication bias was checked by Funnel plot and Egger's test (alpha = 0.1).

Subgroup analysis Subgroup analysis was performed to explore heterogeneity, and we plan to perform subgroup analysis by region, age, or sex, according to what the original articles provide.

Sensitivity analysis This study considers the combined effects of studies by excluding each individual study one by one for sensitivity analysis. If the removal of a single study has a small impact on the combined effect, it indicates that the research results are stable and reliable. If the removal of a single study has a significant impact on the combined effect, it indicates that the results are unreliable and further analysis of this study is needed.

Language restriction English or Chinese.

Country(ies) involved China.

Other relevant information None.

Keywords Melanoma, Polymyositis, Dermatomyositis, risk.

Dissemination plans Plan to disseminate within 6 months.

Contributions of each author

Author 1 - RUI LUO - Formulation of overarching research goals , design of methodology, analyze or synthesize study data, leadership responsibility for the planning and execution, review article.

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Author 2 - DAN XIA - Extract, analyze or synthesize study data, writing the initial draft.

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Author 3 - SHIYANG YU - Apply statistic software, judge results in case of disputes.

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Author 4 - RUILI YUAN - Collect the data.

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