INPLASY PROTOCOL

To cite: Chen et al. Prognostic role of pectoralis muscle parameter for COVID-19: Systematic review with meta-analysis. Inplasy protocol 202330055. doi: 10.37766/inplasy2023.3.0055

Received: 16 March 2023

Published: 16 March 2023

Corresponding author:
Kunlin Chen

2925744417@qq.com

Author Affiliation:
Department of Liver Surgery, West China Hospital, Sichuan University, Chengdu, China.

Review Stage at time of this submission: **Completed but not published.**

Conflicts of interest:
None declared.

Prognostic role of pectoralis muscle parameter for COVID-19: Systematic review with meta-analysis

Chen, KL[1]; Yang, M[2]; Wang, WT[3].

Review question / Objective: **To investigate the relationship between pectoralis muscle parameters and clinical outcomes in patients with coronavirus disease 2019 (COVID-19).**
Condition being studied: **There are a number of clinical problems with COVID-19, including the lack of prognostic indices that can be used to predict whether patients with mild symptoms need preventive therapies or early intervention. Pectoral muscle index (PMI) and pectoral muscle area (PMA) are indicators of sarcopenia and have been shown to predict clinical variables such as length of hospital stay and mortality for some diseases. However, the relationship between pectoral muscle parameters and outcomes in COVID-19 patients still remains uncertain.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 March 2023 and was last updated on 16 March 2023 (registration number INPLASY202330055).

INTRODUCTION

Review question / Objective: **To investigate the relationship between pectoralis muscle parameters and clinical outcomes in patients with coronavirus disease 2019 (COVID-19).**

Condition being studied: **There are a number of clinical problems with COVID-19, including the lack of prognostic indices that can be used to predict whether patients with mild symptoms need preventive therapies or early intervention. Pectoral muscle index (PMI) and pectoral muscle area (PMA) are indicators of sarcopenia and have been shown to predict clinical variables such as length of hospital stay and mortality for some diseases. However, the relationship between pectoral muscle parameters and outcomes in COVID-19 patients still remains uncertain.**

METHODS

Participant or population: Patients were COVID-19 PCR positive and underwent chest CT.

Intervention: There is no intervention, all studies included were observational studies.

Comparator: Survivors compared with non-survivors.

Study designs to be included: Retrospective, prospective cohort, or case-control observational studies; and reporting the hazard ratio (or odds ratio, hazard ratio incidence) with a 95% confidence interval; all included patients were COVID-19 PCR positive and underwent CT.

Eligibility criteria: Retrospective, prospective cohort, or case-control observational studies; and reporting the hazard ratio (or odds ratio, hazard ratio incidence) with a 95% confidence interval; all included patients were COVID-19 PCR positive and underwent CT. Studies were excluded if relevant data on COVID-19 disease outcome were not available. Publications without original data, such as reviews, editorials and commentaries, were also excluded. The study with the largest cohort or with the most detailed information was selected for analysis when studies included overlapping patient cohorts.

Information sources: PubMed, Embase, Web of Science, and the Cochrane library.

Main outcome(s): 30-day mortality, intubation.

Quality assessment / Risk of bias analysis: the Newcastle-Ottawa Scale (NOS) was used to assess the quality of studies included in the meta-analysis.

Strategy of data synthesis: Fixed-effects or random-effects models by the degree of heterogeneity. Risk estimates from all studies were then entered into the main pooled analysis. Between-studies heterogeneity was evaluated using the Q statistic and inconsistency was quantified by the I 2 statistic

Subgroup analysis: Subgroup analysis was not presented due to the limited number of included studies.

Sensitivity analysis: Sensitivity analysis was not presented due to the limited number of included studies.

Country(ies) involved: China.

Keywords: Pectoralis muscle parameters; COVID-19; meta-analysis.

Contributions of each author:
Author 1 - Kunlin Chen.
Author 2 - Ming Yang.
Author 3 - Wentao Wang.

Support: This research was supported by the National Natural Science Foundation of China (Nos. 81770566, 82000599), NHC Key Laboratory of Echinococcosis Prevention and Control (No. 2021WZK1004) and Health Commission of the Tibet Autonomous Region (No.311220432).