



# Chest Pain As a Sign of Cardiac Cystic Echinococcosis: A Systematic Review and Meta-Analysis

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## ABSTRACT

**Introduction:** Human echinococcosis (CE) is a prevailing health issue in underdeveloped and developing nations. Cardiac involvement is a moderately infrequent manifestation of Echinococcus infection. The present study aimed to determine the rate of chest pain as a symptom of cardiac CE.

**Search Strategy:** This study included clinical studies reporting the proportion of cardiac EC patients with chest pain. Reviews, letters, preclinical studies, conference abstracts, and non-English papers were not included. A systematic search was performed in the PubMed and Scopus databases, and the risk of bias in the included studies was assessed using the JBI Case Series checklist. Meta-analysis was performed using the Comprehensive Meta-Analysis Third Edition (CMA3).

**Results:** The rate of chest pain in patients with cardiac CE was reported in 23 out of 3,985 studies. The rates were 41.5% (95% CI: 36.1%-47.0%) and 43.2% (95% CI: 35.1%-51.7%) based on the finite element method and the rapid-eye-movement analysis, respectively. Heterogeneity was borderline ( $I^2$ : 49.07%;  $p$  value for heterogeneity = 0.004). Therefore, the results of both models were presented.

**Conclusion and Discussion:** Cardiac involvement of CE can be presented with chest pain, and it should be considered in suspected patients.

**Keywords:** Chest pain, Echinococcosis, Systematic review