



Electrocardiogram Findings in Cardiac Cystic Echinococcosis: A Systematic Review and Meta-Analysis

Rasa Beheshti¹, Erfan Banisefid¹, Kosar Baghernezhad¹,
Amirreza Naseri¹, Hamid Owaysee Osquee², Elnaz Javanshir^{3*}

¹Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

²Department of Infectious Disease, Tabriz University of Medical Sciences, Tabriz, Iran

³Cardiovascular Research Center, Tabriz University of Medical Sciences, Golgasht Street, Tabriz, East Azerbaijan 5166/15731, Iran

OPEN ACCESS

*Corresponding Author:

Cardiovascular Research
Center, Tabriz University of
Medical Sciences, Golgasht
Street, Tabriz, East Azerbaijan
5166/15731, Iran

Citation:

Beheshti R, Banisefid E,
Baghernezhad K, Naseri A,
Owaysee Osquee H, Javanshir
E. ECG Findings in Cardiac Cystic
Echinococcosis: A Systematic
Review and Meta-Analysis.
Iranian biomedical journal
2024; 28(7): 245.

ABSTRACT

Introduction: Human cystic echinococcosis (CE), a hydatid disease, is a tissue infestation endemic in numerous sheep-farming areas, notably Mediterranean countries, the Middle East, South America, and Australia. Cardiac CE is an infrequent expression of Echinococcus infection, representing 0.5% to 2% of the CE cases. This systematic review and meta-analysis aimed to review cardiac CE in electrocardiogram (ECG) findings comprehensively.

Search Study: We have included all of the case series studies that presented the ECG findings of cardiac CE. Non-English studies, conference abstracts, review studies, letters, and commentaries were excluded. A systematic search was conducted in PubMed and Embase from inception to March 2022. JBI critical appraisal tool for case series was utilized for quality assessments. Meta-analysis of the proportion of normal sinus rhythm (NSR) among Cardiac CE patients was performed using the CMA3. High heterogeneity was identified by the I² statistics of more than 50%, and I² statistics below 50% were identified as low heterogeneity. A fixed effect was used in cases of low heterogeneity; otherwise, a random effect was used.

Results: Among 3,985 records, 20 studies reported the ECG findings. Based on the quantitative synthesis, the proportion of patients with NSR was 48.3% (9 studies; 95% CI: 38.8%-57.9%; I²: 43.99%; *p* value for heterogeneity = 0.075).

Conclusion and Discussion: Non-specific signs and ECG changes make cardiac CE a diagnostic challenge. NSR is the most commonly presented ECG finding in cardiac CE, highlighting the method's lack of diagnostic accuracy.

Keywords: Echinococcosis, Meta-analysis, Systematic review