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Dyspnea As a Sign of Cardiac Cystic Echinococcosis: A Systematic Review and Meta-Analysis

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ABSTRACT

Introduction: This study focuses on a comprehensive exploration of human cystic echinococcosis (CE), a prevalent health concern predominantly observed in underdeveloped and developing countries. Within the complex realm of echinococcus contamination, cardiac involvement emerges as a relatively rare manifestation that deserves meticulous scrutiny and analysis. The primary aim of this systematic review and meta-analysis was to thoroughly examine the frequency of dyspnea among individuals affected by CE, highlighting this specific aspect of the illness that requires in-depth investigation and understanding.

Methods and Materials: The approach adopted in this study involves the careful inclusion of clinical data specifically examining the occurrence of dyspnea in patients with CE. At the same time, it employs strict exclusion criteria that eliminate non-English literature, reviews, correspondences, preclinical studies, and conference abstracts. A rigorous and comprehensive search strategy was executed across the PubMed and Scopus databases, followed by an evaluation of study quality using the JBI critical appraisal checklists. The meta-analytical procedures were carefully conducted using the Comprehensive Meta-Analysis (CMA3) software, ensuring a comprehensive and exhaustive analysis of the collected evidence with a strong emphasis on precision and accuracy.

Results: After screening a total of 3,985 records, 31 studies were identified as relevant to reporting the prevalence of dyspnea in patients with cardiac CE. The quantitative synthesis of data revealed a documented dyspnea rate of 45.5% (with 95% CI ranging from 36.6% to 54.4%; I^2 statistic indicating 55.68% heterogeneity; *p* value for heterogeneity below 0.001). This analysis provides valuable insights into the frequency of this symptom within the studied population, significantly contributing to the existing body of knowledge on this topic.

Conclusion and Discussion: Our findings from the present study highlight the complex relationship between cardiac CE and the presence of dyspnea. This outcome emphasizes the critical importance of recognizing dyspnea as a potential differential diagnosis, particularly in areas where the disease is endemic, necessitating increased vigilance and awareness.

Keywords: Dyspnea, Echinococcosis, Systematic review

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