

# Review of: "Cost-Effectiveness Analysis: Ultrasound with Alpha-Fetoprotein versus Ultrasound Alone for At-Risk Hepatocellular Carcinoma Patients with and without Cirrhosis Progression: A Systematic Review"

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Potential competing interests: No potential competing interests to declare.

The reviewed article conducts a thorough analysis of the cost-effectiveness of using ultrasound in conjunction with the Alpha-Fetoprotein (AFP) tumor marker versus using ultrasound alone for early detection of Hepatocellular Carcinoma (HCC) in at-risk individuals. This research is particularly relevant given the significant global and national impact of HCC, especially in the Philippines, where HCC arises mainly from chronic liver diseases such as cirrhosis due to hepatitis infections, underscoring the need for accurate surveillance methods.

The authors have structured their study on a rigorous methodological framework, involving a comprehensive review and analysis of relevant studies and economic evaluations to determine the most cost-effective screening strategy for high-risk populations. The study is supported by a detailed search strategy across multiple databases and employs a robust review and appraisal methodology, ensuring a comprehensive and objective evaluation of the data. The methodological quality of included studies is assessed using Drummond's Checklist, and data synthesis is conducted using the JBI Dominance Ranking Matrix to classify the cost-effectiveness outcomes of included studies.

The background provided emphasizes the prevalence and mortality associated with HCC, highlighting the pressing need for effective early detection strategies. The study highlights that although ultrasound is a primary screening method recommended by regional liver societies, its efficacy can be enhanced when combined with AFP, achieving greater sensitivity and specificity, invaluable for early detection of HCC, especially in those with cirrhosis or advanced fibrosis.

In reviewing this article, from my experience in hepatic imaging, some key points to consider would include:

**Evaluation of Methodology:** Verify if the study design and methodology applied are sound and appropriate to answer the proposed research questions.

**Analysis of Evidence:** Consider the quality and relevance of the studies included in the systematic review, and whether they adequately represent the variety of clinical contexts in which HCC screening is conducted.

**Results and Conclusions:** Reflect on whether the results presented convincingly support the study's conclusions, especially in terms of the cost-effectiveness of combining ultrasound with AFP versus using ultrasound alone in the early detection of HCC.

**Practical Implications:** Assess the implications of the findings for clinical practice, particularly regarding the implementation of screening strategies in at-risk populations and the potential impact on public health policies.

**Limitations:** Identify any study limitations that might affect the generalization of the findings, as well as areas for future research.

The analysis and synthesis presented in the article provide a solid foundation to inform health policy and clinical practice, enhancing surveillance strategies for individuals at elevated risk of developing HCC and facilitating early interventions to improve health outcomes. The thoroughness in the execution of this study reflects its potential value to significantly contribute to the body of knowledge in HCC detection and management.