

Review of: "Patients With Hereditary Gastric Cancer Linked to a Family History of Hereditary Breast and Ovarian Cancer (HBOC)"

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Potential competing interests: No potential competing interests to declare.

Review of "Familial Gastric Cancer Patients Associated with Hereditary Breast and Ovarian Cancer (HBOC) History"

Abstract

This study investigates the association between *Helicobacter pylori* (*H. pylori*) infection, BRCA1/2 genetic mutations, and the development of gastric cancer (GC) in families with a history of hereditary breast and ovarian cancer (HBOC). Utilizing retrospective, multicenter studies, the researchers found an increased incidence of GC in HBOC families compared to non-HBOC families.

Strengths of the Study

1. Identification of *H. pylori* and BRCA1/2 Link: This study contributes to a deeper understanding of how *H. pylori* infection and BRCA1/2 genetic mutations influence the development of gastric cancer, providing new insights into cancer research.
2. Use of Animal Models: Experiments on genetically modified mice bolster the human findings and offer a deeper understanding of the biological mechanisms involved.
3. Multicenter Methodology: Enhances the credibility and generalizability of the results.
4. Proposal of Potential Therapies: The study suggests the potential use of PARP inhibitors for treating GC in HBOC patients.

Weaknesses of the Study

1. Generalizability Limits: The study focuses on Japanese families, which may limit the generalizability of the results to other populations.
2. Unclear Biological Mechanisms: Despite identifying the relationship between *H. pylori* and BRCA1/2, the biological mechanisms were not fully elucidated.
3. Retrospective Design: The reliance on retrospective data may affect the accuracy of the findings and the ability to establish causality definitively.

Detailed Academic and Linguistic Review

- Terminological Precision: The terms used are accurate and appropriate for the medical and research fields.
- Methodology Description: The methodology is clearly and thoroughly described, facilitating the reproducibility of the experiments.
- Data Analysis: Statistical analysis is well-explained, utilizing appropriate tools such as the Shapiro-Wilk test to ensure normal data distribution.
- Citations: The study references recent and relevant sources, which enhances its credibility.

Rigorous Review and Novelty Assessment

The study offers a novel perspective on the relationship between *H. pylori* infection and BRCA1/2 genetic mutations, contributing to new avenues for treatment and prevention of gastric cancer. The innovative aspects include:

- Linking Two Hereditary Cancers: Establishing a connection between HBOC and gastric cancer.
- Proposing New Treatments: Suggesting PARP inhibitors as a potential treatment.

Recommendations

- Expand the Study Scope: Conduct similar studies in different populations to verify the generalizability of the findings.
- In-depth Biological Mechanisms: Further investigate the biological interactions between *H. pylori* and BRCA1/2 for a clearer understanding.
- Prospective Longitudinal Studies: Implement long-term studies to track the development of cases more accurately.

Overall, this research significantly contributes to the field and opens new pathways for understanding and treating hereditary gastric cancer. It is recommended for publication with minor revisions as suggested.