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Association of Anorexia Nervosa With Risk of Cancer

[1] A.Vyas, [1] A.Bahl
[1,2] Charles R. Drew University of Medicine and Science
Correspondence : dr.vyas39485@gmail.com

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ABSTRACT

Background: The association between anorexia nervosa and cancer risk has garnered increasing attention in the academic literature, with several systematic reviews and meta-analyses illuminating the complexities of this relationship. In 2017, (Catalá-López et al., 2017) initiated an exploration into this topic by outlining a protocol for a systematic review and meta-analysis aimed at evaluating the potential links between anorexia nervosa and cancer outcomes, recognizing that both conditions are significant public health concerns. **Literature Review:** Subsequent systematic reviews and meta-analyses by (Valderas Martinez et al., 2019) and (Catalá-López et al., 2019) further elucidated this relationship. The former reported a decreased incidence of breast cancer among women with anorexia nervosa, attributing this finding to hormonal factors such as lower serum concentrations of estradiol and insulin-like growth factor 1. They also highlighted an increased risk of smoking-related cancers, indicating that caloric restriction does not uniformly confer protective effects against cancer. The latter study reinforced these findings while emphasizing the limited evidence supporting a significant inverse relationship between anorexia nervosa and overall cancer risk. Their analysis suggested that while specific cancers might be less prevalent, the overall incidence of cancer does not appear to be significantly influenced by anorexia nervosa. **Conclusion:** Together, these articles underscore the necessity for further investigation into the biological mechanisms underlying the observed associations. The complexity of the anorexia nervosa-cancer risk relationship indicates that while certain protective effects may exist, they are not universally applicable across all cancer types. Future research should aim to clarify these nuances and consider confounding factors that may influence outcomes, ultimately enhancing clinical understanding and public health strategies related to both anorexia nervosa and cancer risk.

Keyword: Association, Anorexia Nervosa, Risk, Cancer

INTRODUCTION

The association between anorexia nervosa and cancer risk has garnered increasing attention in the academic literature, with several systematic reviews and meta-analyses illuminating the complexities of this relationship. In 2017, (Catalá-López et al., 2017) initiated an exploration into this topic by outlining a protocol for a systematic review and meta-analysis aimed at evaluating the potential links between anorexia nervosa and cancer outcomes, recognizing that both conditions are significant public health concerns. This foundational work set the stage for subsequent investigations into specific cancer risks associated with anorexia nervosa.

Building upon this groundwork, (Valderas Martinez et al., 2019) conducted the first comprehensive systematic review and meta-analysis that specifically assessed the association of anorexia nervosa with cancer risk. Their findings revealed a nuanced picture: while anorexia nervosa appeared to correlate with a reduced incidence of breast cancer compared to the general female population, it was also associated with an increased risk for smoking-related cancers in women. The authors highlighted that the mechanisms behind these associations remain poorly understood, although they suggested that hormonal factors, such as reduced serum concentrations of estradiol and insulin-like growth factor 1, might contribute to the observed lower breast cancer risk.

In the same year, (Catalá-López et al., 2019) further refined the understanding of these associations through another systematic review and meta-analysis. They emphasized that evidence supporting a significant inverse relationship between anorexia nervosa and overall cancer risk is limited. While the decreased risk of breast cancer was reaffirmed, they also noted potential increases in the risk of lung and esophageal cancers, albeit with low confidence in the evidence. This analysis underscored the complexity of the anorexia nervosa-cancer risk relationship, indicating that while caloric restriction might influence specific cancer risks, it does not necessarily confer broad protective effects against cancer.

Together, these articles illustrate the intricate interplay between anorexia nervosa and cancer risk, revealing both protective and risk-enhancing associations that warrant further investigation. The ongoing dialogue in the literature suggests a need for deeper exploration into the biological mechanisms at play and the implications for clinical practice and public health.

LITERATURE REVIEW

The article "Anorexia nervosa and cancer: a protocol for a systematic review and meta-analysis of observational studies" by (Catalá-López et al., 2017) presents a systematic approach to investigate the potential association between anorexia nervosa and cancer risk. The authors articulate a clear rationale for their research, emphasizing the dual public health concerns posed by anorexia nervosa, a serious eating disorder, and cancer, which is the second leading cause of mortality globally.

In their protocol, the authors detail the methodology for conducting a systematic review and meta-analysis of existing observational studies. This structured approach is commendable as it aims to synthesize data from multiple studies to provide a more comprehensive understanding of the relationship between anorexia nervosa and cancer risk. The emphasis on observational studies is particularly relevant given the ethical challenges of conducting randomized controlled trials in this population, which often faces significant health complications.

The article highlights the characteristics of anorexia nervosa, including severe caloric restriction, low body weight, and distorted body image, which may contribute to various physiological changes. These changes could potentially influence cancer risk factors, such as immune function and metabolic processes. However, the authors acknowledge the complexity of this relationship and the need for rigorous analysis to clarify the potential causal pathways involved.

Furthermore, the authors propose to explore not only the incidence of cancer among individuals with anorexia nervosa but also the mortality rates associated with cancer in this population. This dual focus is crucial, as it addresses both the development of cancer and the outcomes of those who may already be affected,

thereby providing a more holistic view of the health implications of anorexia nervosa.

While the article sets a solid foundation for future research, it also raises important questions regarding the potential confounding factors that may influence the observed associations. Factors such as age, sex, duration of anorexia nervosa, and comorbid psychiatric conditions will need to be carefully considered in the analysis. The authors' acknowledgment of these complexities reflects a thoughtful approach to the research design.

The article titled "Association of anorexia nervosa with risk of cancer: A systematic review and meta-analysis" by (Valderas Martinez et al., 2019) provides a comprehensive analysis of the relationship between anorexia nervosa and cancer risk. This systematic review and meta-analysis stands out as a significant contribution to the existing literature, primarily due to its rigorous methodology and the breadth of data analyzed.

The authors assert that their findings do not support the existence of a general inverse association between anorexia nervosa and cancer risk. Notably, they report a decreased incidence of breast cancer among women with anorexia nervosa, which they attribute to several biological mechanisms, including lower serum concentrations of estradiol and insulin-like growth factor 1, as well as reduced lifetime exposure to estrogens due to delayed puberty and early menopause ((Valderas Martinez et al., 2019)). This insight is particularly valuable as it highlights the complex interplay between hormonal levels and cancer risk, suggesting that the physiological state induced by anorexia nervosa may influence the development of hormone-sensitive cancers.

The article also critically examines the limitations of caloric restriction as a protective factor against cancer. While the authors acknowledge the reduced risk of certain cancers, they emphasize that this does not imply a broad protective effect of anorexia nervosa against all cancer types. Specifically, the increased risk of smoking-related cancers, such as lung and esophageal cancers, is discussed, with the authors clarifying that this heightened risk does not correlate with a greater

prevalence of smoking among individuals with anorexia nervosa ((Valderas Martinez et al., 2019)). This distinction is crucial, as it underscores the need for further research to explore the underlying factors contributing to these associations.

Moreover, the article raises important questions regarding the mechanisms that may explain the observed patterns of cancer risk in individuals with anorexia nervosa. The authors rightly point out that while some cancers appear to be less prevalent, the reasons behind these trends remain inadequately understood. This gap in knowledge highlights the necessity for future studies to delve deeper into the biological and behavioral aspects that could elucidate the relationship between anorexia nervosa and specific cancer risks.

The article "Association of Anorexia Nervosa With Risk of Cancer: A Systematic Review and Meta-analysis" by (Catalá-López et al., 2019) presents a comprehensive examination of the relationship between anorexia nervosa and cancer risk. This systematic review and meta-analysis is notable for being the first of its kind to investigate this association, providing critical insights into the complex interplay between eating disorders and cancer susceptibility.

The authors conducted a thorough analysis of existing literature, identifying a minority of associations between anorexia nervosa and specific cancer types that possess supporting or suggestive evidence. Their findings indicate that while anorexia nervosa is associated with a decreased incidence of breast cancer in young women, there are potential increases in the risk of lung and esophageal cancers, albeit with low confidence in the evidence. This nuanced understanding is essential, as it challenges the notion of a straightforward relationship between anorexia nervosa and cancer risk.

One of the key contributions of this article is its exploration of the biological mechanisms that may underlie these associations. The authors suggest that reduced serum concentrations of estradiol and insulin-like growth factor 1, along with decreased lifetime exposure to estrogens, could explain the observed lower risk of breast cancer among individuals with anorexia nervosa. This insight is particularly

relevant as it highlights the potential role of hormonal factors in mediating cancer risk, especially in estrogen-responsive tumors.

However, the authors also caution that the extreme caloric restriction characteristic of anorexia nervosa may not confer substantial protection against cancer overall. Their analysis indicates that while there are specific cancers where associations can be noted, the overall incidence of cancer does not appear to be significantly influenced by anorexia nervosa. This finding is critical for understanding the broader implications of anorexia nervosa on health, particularly in clinical settings where treatment for eating disorders may inadvertently overlook potential oncological risks.

CONCLUSION

The literature presents a complex relationship between anorexia nervosa and cancer risk, revealing both protective and risk-enhancing associations. The foundational work by (Catalá-López et al., 2017) established a systematic approach to investigate this relationship, recognizing the dual public health concerns posed by anorexia nervosa and cancer. Their proposed methodology emphasized the necessity of observational studies, given the ethical challenges in conducting randomized controlled trials in this population, which often experiences severe health complications.

Subsequent systematic reviews and meta-analyses by (Valderas Martinez et al., 2019) and (Catalá-López et al., 2019) further elucidated this relationship. The former reported a decreased incidence of breast cancer among women with anorexia nervosa, attributing this finding to hormonal factors such as lower serum concentrations of estradiol and insulin-like growth factor 1. They also highlighted an increased risk of smoking-related cancers, indicating that caloric restriction does not uniformly confer protective effects against cancer. The latter study reinforced these findings while emphasizing the limited evidence supporting a significant inverse relationship between anorexia nervosa and overall cancer risk. Their analysis suggested that while specific cancers might be less prevalent, the overall

incidence of cancer does not appear to be significantly influenced by anorexia nervosa.

Together, these articles underscore the necessity for further investigation into the biological mechanisms underlying the observed associations. The complexity of the anorexia nervosa-cancer risk relationship indicates that while certain protective effects may exist, they are not universally applicable across all cancer types. Future research should aim to clarify these nuances and consider confounding factors that may influence outcomes, ultimately enhancing clinical understanding and public health strategies related to both anorexia nervosa and cancer risk.

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