Illex Paraguariensis (Yerba Mate) Infusions and Risk of Oral Cancer: A Structured Literature Review

Jean Marc P. Aguilera
University of Ottawa

Abstract

Yerba Mate (ilex paraguariensis infusion, referred to as mate) is a popular drink consumed throughout the world, especially in South America, that is widely considered a healthy alternative to coffee. However, recent research has discovered a possible link between the consumption of mate and oral cancer. As such, the objective of this analysis is to investigate the association between oral cancer and habitual consumption of ilex paraguariensis infusions. A structured literature review was conducted using PubMed, Scopus, ScienceDirect and CINAHL. Primary research through 2015 was included; all reviews were excluded. Keywords used were "ilex paraguariensis", "yerba mate", "yerba", "cancer", "neoplasms", "neoplasia", "tumor", and "tumour." Articles investigating associations between ilex paraguariensis consumption and non-cancers were excluded.

Background & Rationale

Since the emergence of widespread globalization, several food and beverage choices traditionally isolated to a single culture have spread across national/cultural lines. One such export is a traditional South American beverage called mate, an infusion made from the ilex paraguariensis plant that is consumed widely in Argentina (where it is defined by law as the official national infusion), Uruguay, Paraguay, Brazil, and southern Chile. Recently, infusions of ilex paraguariensis have become increasingly popular in the United States, Canada and some parts of the Middle East including Lebanon and Syria. Advocates note that it contains antioxidants and a variety of vitamins.

Furthermore, mate contains a variety of phenolic constituents. However, it is possible that the beverage causes more ill than good, as it is frequently associated with various oral cancers.

Purpose

To investigate the association between oral cancer and habitual consumption of ilex paraguariensis infusions among adults between 18-55 years of age.

References

7. Ferreira et al. (2009) Mate attenuates DNA damage and carcinogenicity induced by diethylnitrosamine and thermal injury in rat esophagus. Randomized Controlled Trial (Wistar Rats).

Methods

A structured literature review was conducted by searching four databases (PubMed, Scopus, ScienceDirect and CINAHL) using the phrase "("ILEX PARAGUARIENSIS" OR "YERBA MATE" OR "YERBA") AND (CANCER OR NEOPLASM OR NEOPLASMA OR TUMOUR OR TUMOUR). For the PubMed search, the quotations were omitted from the words "ilex paraguariensis" in order to access articles under the MeSH heading of that name.

Inclusion Criteria

- ilex paraguariensis
- consumption

Exclusion Criteria

- Other methods of consuming ilex paraguariensis
- Other infusions
- Oral Cancers
- Non-ororal cancers
- Non-cancerous oral diseases

References

1. Permanent Accessibility

Discussion

According to the literature, habitual consumption of ilex paraguariensis infusions seem to increase the risk of developing oral cancer. Most of the studies found were case control studies. Overall, four of the studies analyzed showed increased risk for oral neoplasms, especially in the esophagus. However, Deneo-Pellegrini et al. suggested that the association only exists when interaction terms for tobacco and alcohol use are included. This indicates that the carcinogenic effects of mate may be attenuated by alcohol or tobacco. However, evidence was not so clear when attempting to discern the effects of hot vs cold mate.

Conclusion

Upon analysis of the 7 studies considered, habitual consumption of ilex paraguariensis infusions seems to increase the risk of developing oral cancer. However, it is unclear whether the associated risk changes depending on the temperature of the mate infusion.