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Risk of colorectal cancer due to *Streptococcus gallolyticus*: a systematic review

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Abstract

Introduction: World Health Organization (2019) has declared colorectal cancer (CRC) as the second most common cancer in females and third in males, where the incidence seems to rise year by year. One of the very few potential pathogens specifically associated with malignant colonic diseases is *Streptococcus gallolyticus* (Sg). Sg is a part of the intestinal flora which formerly known as biotype I of *Streptococcus bovis*, belongs to Group D streptococci. Owing to only a few researches done in determining evidence to support Sg as a determinant of CRC, a systematic review is constructed. **Materials and Methods:** Full-text articles on case-control and cohort studies published from 1st January 2010 to 1st October 2020 were searched using Google Scholar, PubMed and JSTOR. People of all age groups and Sg bacteraemia or colonisation were the type of participant and exposure used for the search strategy, respectively. Data collection was done by three reviewers and checked by two

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reviewers for discrepancies. All the papers were critically appraised using the STROBE statement. Qualitative synthesis was done by descriptive comparison, distribution of Sg according to stage comparison, method used for Sg detection comparison and risk of bias comparison. Result: Seven out of 11 articles that fulfil the eligibility criteria were selected. Four papers have low overall risk of bias due to low confounding or selection bias. Sg is found to be a risk factor for CRC from three papers studied, whereas the other four papers did not include the strength of association. Only two papers studied the association between the distribution of Sg and stages of CRC, where the results were contradictory from each other, making it to be inconclusive. The most common method used for Sg detection is a culturing technique, followed by molecular and biochemical techniques. Conclusion: There is insufficient evidence to prove the association between Sg bacteraemia as the risk factor for CRC as well as the association between the Sg distribution and stages of CRC. Culturing technique is the most common method used for the detection of bacteria, but it requires subsequent investigations to confirm the presence of Sg. Thus, it is recommended that more studies need to be done using strong statistical analysis to control for most of the confounders with comprehensive explanation and use of more methods in the detection of Sg. © 2023, Malaysian Medical Association. All rights reserved.

Author keywords

case-control studies; cohort studies; colorectal cancer; Streptococcus gallolyticus; systematic review

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