



Cranberry juice as an adjunctive therapy for the management of periodontal disease.

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Introduction

Periodontal disease is the inflammation of the tissue that surrounds and supports teeth. It can be classified into three groups, gingivitis, chronic periodontitis, and advanced periodontitis. Periodontal disease occurs when bacteria accumulate on the teeth along the gum line and create an inflammatory response, which can lead to loss of supporting tissue and bone structure and loss of teeth. The progression of periodontal disease occurs from an over expressed immune response to the lipopolysaccharides produced by the oral pathogens in the dental biofilm. Oral pathogens also produce proteases which are also partially responsible for the progression of tissue destruction in periodontal disease. Cranberry juice is used as a form of prevention and treatment for urinary tract infections. The high-molecular-weight compound (NDM) in cranberry juice prevents the adhesion of bacteria to the epithelial tissue in the bladder.

This mechanism has led to new research about the possibility of using cranberry juice for periodontal disease, to prevent the adhesion of oral pathogenic bacteria. High-molecular-weight compounds in cranberry juice also inhibit the inflammatory response which leads to the progression of periodontitis. More research is needed that uses cranberry juice, not just the concentrated high-molecular-weight compound, in the treatment of periodontal disease to determine if there are any benefits of using it as an adjunctive therapy for management of periodontal disease.

Mechanisms

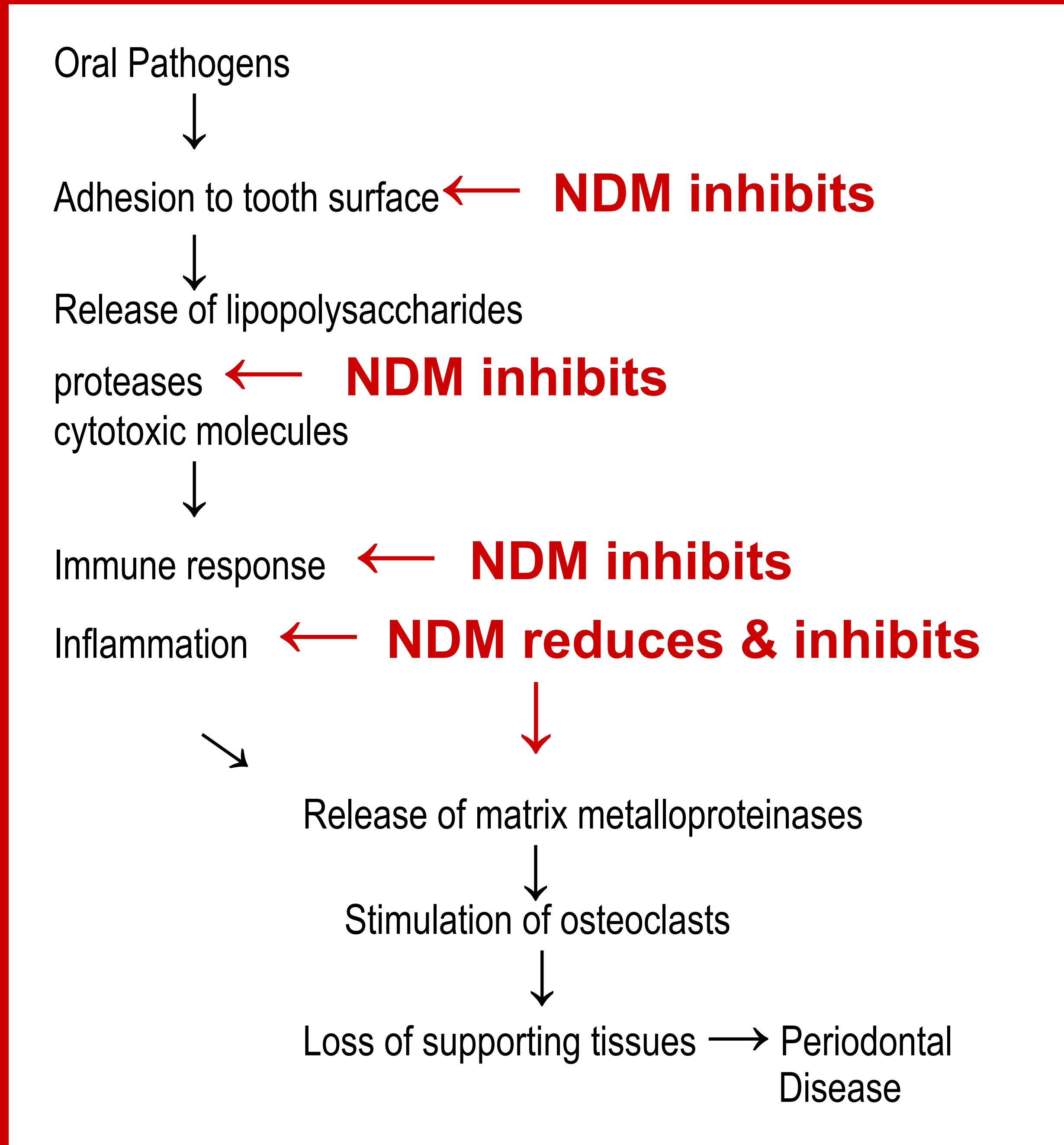


Figure 1: Effects of cranberry juice components in the development of periodontal disease.

Previous Methodology

Other forms of treatment for periodontal disease include root planing and scaling, antibiotics, antimicrobial mouthwashes, soft tissue graft surgery, and removal of teeth. The best form of treatment is prevention, brushing, flossing and visiting the dentist regularly.

Future Research

There are possible therapeutic benefits of cranberry juice for cardiovascular disease, Alzheimer's disease, influenza virus adhesion, arthritis, and cancer.

The risk of using cranberry juice is the high sugar content, to reduce this risk alternative sweeteners should be investigated. Ocean Spray® has recently created a reduced calorie, Splenda™ sweetened cranberry juice that could possibly be used.

The possible use of cranberry juice as an adjunctive therapy for periodontal disease should be tested on a variety of people: different ages, gender and risk populations to see how these different groups react to cranberry juice.

Summary & Conclusions

Preliminary evidence is promising, however the studies done have been using concentrated non-dialyzable material and in vitro. More research using cranberry juice and human subjects is needed. The possibility of using cranberry juice as an adjunctive therapy for periodontal disease is important because bacterial cannot build up resistance to anti-adhesion properties.



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