

A Single Cleansing with Botanical Compounds Reduces Oral Bacteria

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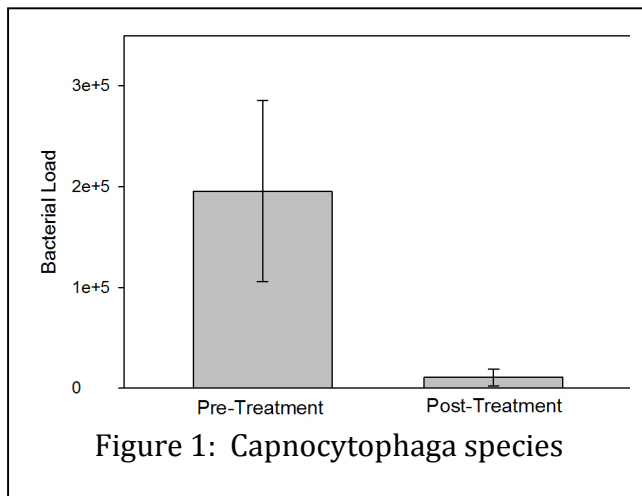
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Microorganisms, which are an essential part of the normal oral flora, can contribute to periodontal disease when not managed properly. Nature provides compounds that can help to keep the oral microbes in a healthy distribution. Bioactive natural ingredients including, prunus dulcis (sweet almond oil), aloe barbadensis (aloe vera), triticum aestivum (wheatgrass), menthe piperita (peppermint) oil, and rosmarius officinalis (rosemary) oil have been reported to have positive effects on the inhibition of common oral bacteria. However, the majority of this work has been shown in vitro, with few in vivo studies. A combination of these natural plant compounds, called Triology rinse, was tested in patients with and without known oral health issues. Eleven subjects, ages 29-58 years, were consented and produced a sputum sample, which served as the pre-treatment control. Subsequently, each subject rinsed with the Triology rinse for 30-60 seconds, followed by extensive

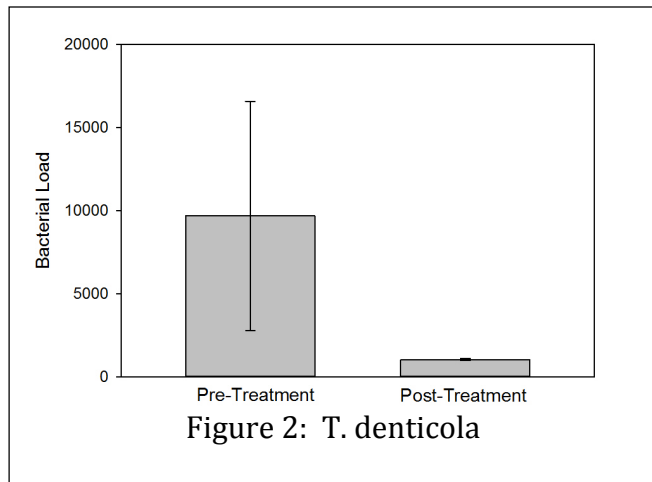
rinsing with water. A post-treatment sputum sample was collected as a comparison



The samples were tested for detection of bacterial DNA using polymerase chain reaction (PCR) conducted by OralDNA, Inc. Each sample was normalized to an internal DNA control to provide a human genome equivalent. The bacteria tested encompassed some of the most predominant microflora of the mouth including:

Aggregatibacter actinomycetemomitans (Aa), *Porphyromonas gingivalis* (Pg), *Treponema denticola* (Td), *Eubacterium nodatum* (En), *Fusobacterium nucleatum/periodonticum* (FN), *Prevotella intermedia* (Pi), *Campylobacter rectus* (Cr), *Peptostreptococcus micros* (Pm), *Eikenella corrodens* (Ec), and *Capnocytophaga species* (Cs)).

The total bacterial load from the tested population dropped an average of 90% with a single rinse with the natural compounds. More importantly, the bacteria loads that were below the detection level increased from 37 in the pretreatment to 61 post-treatment. Specifically, the greatest changes were noted in the capnocytophaga species, which includes gingivalis, ochracea and sputigena. Figure 1 illustrates the decline in bacterial load after rinsing. This family of bacteria are part of the normal human oral bacterial flora, but are also recognized as opportunistic pathogens leading to periodontal disease.



T. denticola is a bacteria that has been strongly associated with chronic perioditis. It was reduced significantly in the subjects tested with the botanical combination therapy as shown in Figure 2.

82% of all subjects tested had a reduction in their total bacterial load. Two of the people tested showed no effect of the combination treatment. Interestingly, both had bacterial loads prior to treatment that were in the bottom half of all subjects. Thus, a lower initial bacterial load may partially explain the lack of change.

A reduction in the bacterial level of 50% or greater was achieved with the single serum rinse treatment in 7 of 11 of the bacteria tested, as shown in the accompanying table.

In summary, this pilot study indicates that there was a dramatic reduction in the majority of bacteria evaluated with the use of a proprietary botanically-based serum rinse. A larger-scale study with a control group is in development.

bacterial species	% decline
Aa	96
Pg	83
Tf	15
Td	94
En	74
Ef	97
Pi	5
Cr	6
Pm	88
Ec	7
Cs	94