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**File: ■ Pomegranate (*Punica granatum*)  
■ Chamomile (*Matricaria recutita*)  
■ Gingivitis**

**HC 031421-494**

**Date: April 15, 2014**

**RE: Pomegranate and Chamomile Extracts Help Reduce Bleeding in Patients with Gingivitis**

Batista ALA, Lins RDAU, de Souza Coelho R, do Nascimento Barbosa D, Moura Belém N, Alves Celestino FJ. Clinical efficacy analysis of the mouth rinsing with pomegranate and chamomile plant extracts in the gingival bleeding reduction. *Complement Ther Clin Pract.* February 2014;20(1):93-98.

Poor oral hygiene can lead to gingivitis and the painful inflammation, swelling, and bleeding of the gums adjacent to the teeth. Gingivitis results from the build up of a biofilm of bacteria, polysaccharides, and glycoproteins on the teeth and is most often treated by the mechanical removal of this biofilm (scraping and root planning [SRP]) in conjunction with an antimicrobial mouthwash. Chlorhexidine is the most common mouthwash in use but has a number of negative side effects that include tooth and mouth staining, loss of sense of taste, and allergic reactions. Pomegranate (*Punica granatum*) and chamomile (*Matricaria recutita*) extracts have been proposed as mouthwashes to treat gingivitis due to their antimicrobial and anti-inflammatory qualities. The goal of this randomized, controlled, double-blind study was to compare the efficacy of pomegranate and chamomile extracts to chlorhexidine mouthwash in treating bleeding gingivitis.

The study was conducted from October 2010 to June 2011 at the Department of Clinical Dentistry at Paraíba State University, Brazil. Patients were 18 years of age or older and had gingivitis and chronic periodontitis. Patients were excluded if they had braces, diabetes, were pregnant or lactating, required antibiotics, or were immunocompromised. Fifty-five patients were randomly assigned to 1 of the following 3 mouthwash treatment groups: chlorhexidine (0.12% solution, n = 18), pomegranate extract (n = 19), and chamomile extract (n = 18). The extracts were made with 100 mg of dry plant material extracted in ethanol. Antimicrobial activity was evaluated, and the extracts were diluted to 5% solutions with sterile, distilled water. On the first day of the study, patients underwent SRP, began mouthwash treatment, received a dental hygiene orientation, and were evaluated for gingival bleeding with the Gingival Bleeding Index (GBI) presented as a percentage of areas that bled after probing. Patients were instructed to rinse with the treatment mouthwash twice per day 30 minutes after brushing their teeth in the morning and evening for 15 days. GBI was evaluated at 7 and 15 days after

treatment began. The data were evaluated with analysis of variance (ANOVAs), student t-tests, and Tukey tests.

The patients' ages ranged from 18-56, and 86% of the patients were women. All of the treatments resulted in a significant reduction in gingival bleeding at 7 and 15 days (all P values < 0.001). While the treatments showed differing efficacy in reducing bleeding, there was no significant difference among treatments at any of the time points measured. The chlorhexidine treatment reduced bleeding from  $65.50 \pm 21.96\%$  to  $20.25 \pm 19.86$ ; the chamomile rinse from  $66.71 \pm 24.5\%$  to  $31.55 \pm 21.87$ ; and the pomegranate rinse from  $62.84 \pm 25.07\%$  to  $23.60 \pm 17.07$ . The greatest reduction in bleeding for all treatments was seen in the first 7 days of the study. No adverse reactions were reported in any of the treatments.

Each of the mouthwashes used in this study resulted in a significant reduction in gingival bleeding. Chlorhexidine did result in the greatest reduction in bleeding, followed by pomegranate extract, but there was no significant difference in the reduction of bleeding among treatments. These results suggest that both pomegranate and chamomile extracts could be used in conjunction with SRP to reduce gingivitis. Patients did not note any adverse side effects with the treatments. There is evidence that chlorhexidine has limited adverse effects within the first 2 weeks of use. It would be useful to have a similar study in which treatment is continued for a longer period of time in order to compare the adverse effects of chlorhexidine and the extracts used in this study.

—*Cheryl McCutchan, PhD*

The American Botanical Council has chosen not to include the original article.

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