

# Dantrakshanam: An Ancient Wisdom For Modern Dental Care- An In Vivo Clinical Study

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## Abstract

*CharakSamhita* advocated the Tridosha theory of disease which categorizes human beings into Vata, Pitta, and Kapha groups based on the body constitutional type. According to this theory disease is explained as disturbance in the equilibrium of the three humors. There is a strong association of Pitta dosha and oral health. The present clinical study aims to evaluate and compare the Salivary pH, strep mutans count and DMFT among children with Pitta Dosha. A total of 30 subjects aged 8-12 years visiting the OPD of Ayurvedic Hospital were included in the clinical study. Only those children with predominant Pitta Dosha were included in the study. Strep mutans count, salivary pH and DMFT score of each patient was checked at baseline and after three months. Statistical analysis was done to find the association between Pitta Dosha and dental caries. It was found that mean DMFT score was high among all the subjects. There was a statistically significant reduction found in strep mutans count and salivary pH in the subjects who received ayurvedic treatment for their Pitta dosha. The results confirmed that modification of Pitta prakriti type in the patients can reduce the chances of having dental caries and also can influence individuals' susceptibility to oral disorders.

**Keywords:** ayurveda, dental caries, pitt dosha

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## INTRODUCTION

*Aaryogyam param bhagyam swasthyam sarvarth sadhanam – a good health is wealth in one's life.*

Problems with oral health have been the biggest global health concern for many centuries. For instance, as of 2010, 621 children and 2.4 billion adults worldwide were affected by dental cavities in their permanent teeth<sup>1</sup>. The prevalence of severe periodontitis was over 10% worldwide. The quality of life and general health are significantly impacted by oral health issues<sup>2</sup>. Dental caries is the third most common chronic non-transmissible disease that needs global attention for prevention and treatment, according to the World Health Organisation (WHO). Worldwide, dental caries is quite common and affects people from all walks of life<sup>3</sup>. Dental caries is quite common in developing nations like India, especially in children and teenagers<sup>4,5</sup>. People acquire lifelong, sustainable health-related practices, as well as beliefs and attitudes, throughout the formative years of school<sup>6</sup>.

Ayurveda is not just about treating diseases; it is about creating harmony in body, mind, and spirit<sup>7</sup>. The Tridosha theory of sickness, which divides people into Vata, Pitta, and Kapha groups according to their bodily constitutional types, was promoted by CharakSamhita. The health and equilibrium of living things are governed by the dosas. Living things are in a normal state of health when these energy forces are in balance; when they are not, illnesses result. They are in charge of all physiological functions, whether they are chemical or physical<sup>7</sup>. The Ayurvedic philosophy states that every person is born with a distinct bodily type that is categorised as Vata Prakriti, Pitta Prakriti, or Kapha Prakriti based on the prevalence of one or more of the three dosas. Prakriti is formed after an organism's conception and remains constant during its lifetime.

It has also been demonstrated that Tridosa increases a person's susceptibility to certain illnesses, such as obesity. Tridosa was found to be associated with the levels of coronary artery disease biomarkers by Mahalle et al<sup>8</sup>. Tridosa and levels of inflammatory genes that cause rheumatoid arthritis were linked by

Juyal et al<sup>10</sup>. Purvya and Meena established a link between Tridosha and cancer and aging<sup>9</sup>. Tridosha was observed to be associated with the prevalence of diabetes by Kumar et al,<sup>11</sup>. There is a strong association of Pitta dosha and oral health, as pitta imbalance is linked to high stomach acidity, which can lead to acidic pH of saliva. This might result in enamel demineralization and an increased susceptibility to caries. Nevertheless, there was no published data relating the Tridosha idea to oral health issues. Pitta dosha is well known to cause diabetes, arthritis, and even cancer, but no correlation has been discussed between pitta dosha and dental caries. Thus, the purpose of this study is to assess and compare the DMFT, strep mutans count, and salivary pH in children with Pitta Dosha.

### Material Method

A total of 30 subjects aged 8-12 years visiting the OPD of Ayurvedic Hospital were included in the clinical study. According to Charak Samhita, a standardised checklist that combined questionnaire-based evaluation with physical examination of the body—such as stomach fullness, hair colour and texture, etc.—was employed to identify their body constitutional categories.

#### Inclusion Criteria:

1. Children predominantly having Pitta dosha
2. Children who gave consent

#### Exclusion criteria:

1. Children having Vatta & Kapha dosha
2. Children who didn't give voluntary consent

Only those children with predominant Pitta Dosha were included in the study. Strep mutans count, salivary pH, and DMFT score of each patient were checked at baseline, after which they were randomly divided into two groups:

1. Group A (15 participants) who received ayurvedic treatment and lifestyle modification for decreasing their Pitta Dosha
2. Group B (15 participants) who did not receive any treatment.

Each patient's DMFT score, salivary pH, and Strep mutans count were reassessed after three months. The salivary pH was measured at the chairside employing the salivary pH strips after the unstimulated saliva had been gathered.

The collected saliva was transported to the laboratory to check for the strep mutans count. Before being utilised for 15 seconds, the saliva samples were vortexed. On Mitis Salivarius Agar (Himedia M259, Lot No Y1100, HiMedia Laboratories Pvt. Ltd, Mumbai, Maharashtra, India), one loop (1/1000th ml of material) was infected utilising potassium tellurite medium. The plates were placed in a jar with 5–10% CO<sub>2</sub> as well as incubated for 48 hours at 37°C. In order to calculate the number of colony-forming units (CFU) per millilitre of saliva, colonies with Streptococcus mutans morphologic features (0.5 mm raised, convex, undulated colonies of light blue colour with rough margins, granular frosted glass appearance) were counted on the plates employing a magnifying lens.

To determine whether Pitta Dosha and dental caries are related, the data were imported into Microsoft Excel, and statistical analysis was performed employing SPSS version 18.0.

### RESULTS

Age-wise distribution of study population among experimental & control group was found to be significantly different among experimental and control groups (Table 1).

At baseline, the experimental group had 5.64 mutans, while the control group had 5.43 mutans (Table 2). It was found in the intra-group comparison that there was a decrease in the strep mutans count in the experimental group, whereas the salivary strep mutans count increased in a three-month interval, which was found to be a statistically significant difference (Table 3).

Between the experimental group and the control group, a statistically significant difference in the lowering of salivary pH was seen at baseline and three months later (Table 4).

There was mean % of 2.93 and 11.3 in salivary strep mutans count and salivary pH at baseline and 3-month interval. There was no change in the deft & DMFT score in the experimental group population, whereas there was an increase in the deft & DMFT score among the control groups (Table 5).

## DISCUSSION-

According to Ayurveda, which takes a holistic approach, each person is born with a distinct body type based on the dominance of one or more of the three prakriti types—Pitta, Kapha, and Vatta. The goal of the current study is to discover if a person's Prakriti influences how likely they are to get dental cavities. Acid, fire, or Agni in the stomach is required to disintegrate the food we eat. If for any reason this acid increases in the body, it could be harmful. If this increase in acidity increases the salivary pH, it might change the oral environment and lead to tooth demineralization or dental caries. Studies suggested that there is mouth ulceration due to increased acidity in the stomach. Study done by Acharya BalKrishna et al concluded that increase in pitta cause increase the susceptibility of dental caries<sup>7</sup>. Old literature, such as Charakasamhita by Shusruta, Shalaky Tantra by Rishi Shalkya, and Astanga by Rishi Patanjali, describes the term Krimidenta, which is the decay of the tooth by a worm, due to the increase in pitta in the body.

It was found in our study that there was a statistically significant reduction in the salivary pH after the ayurvedic treatment and lifestyle and dietary modifications, which were in accordance with the studies done by Gayathri Ramesh et.al, which concluded that chewing

household herbal leaves has a beneficial effect on salivary and tongue coating pH<sup>12</sup>. The decrease in salivary pH might be because ayurvedic medicines have cooling herbs, extract of fruits and vegetables that might decrease the acidity in the body. Therefore, salivary pH might have decreased because of a decrease in acidity.

There was statistically significant reduction in the strep mutans count in the patients following ayurvedic treatment in our study which were in accordance with the studies done by Sunethra Rajapakse in which they also concluded that ayurvedic medications contributes to the maintenance of oral health through the inhibition of S. mutans biofilm formation thereby reducing the strep mutans count in the saliva<sup>13</sup>. The decrease in salivary pH might have reduced the Streptococcus mutans count in the experimental group. Also, avipattikar churna and triphala churana given to the experimental group are antimicrobial and anti-inflammatory in nature. These medications might also have decreased the Streptococcus mutans count.

The DMF score was not changed significantly, which might be because it takes time to develop a new carious lesion.

## Conclusion-

The results of the present clinical study were statistically significant and are encouraging to widen and deepen the present research. It was found that there was a reduction in Salivary strep mutans count, salivary pH in the subjects who had received ayurvedic treatment for improving their Pitta Prakriti. Similar studies on relating Tridosa and oral disorders in the light of genome—wide parameters need to be undertaken, which would advance the present understanding to the next level and enrich the emerging concept of the role of ayurvedic medicine & oral health. But we do not have direct support evidence to validate the results of the present clinical study that decreasing the Pitta Prakriti can decrease the susceptibility to dental caries.

## Clinical significance-

While modern dentistry focuses on fluoride-based prevention, mechanical plaque control, and sealant interventions, Ayurveda offers a holistic, nontoxic, and effective alternative in paediatric dentistry. It emphasizes more on doshas (biological energies), diet, lifestyle, and herbal remedies in maintaining oral health. This framework provides natural, biocompatible alternatives to conventional treatment. Thus, further studies are needed to be taken on a larger sample group to validate the results, which will open up the doors for future research and prevention of dental caries, which is one of the most prevalent non-communicable oral diseases.

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