

The Role Of *Plantago Major* Mother Tincture As An External Application In The Management Of Painful Dental Complaints: An Observational Study

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ABSTRACT

This prospective observational study, evaluated the efficacy of *Plantago major* mother tincture (Q) as a topical intervention for dental pain. Over a sample of 30 patients presenting with conditions such as dental caries and periodontitis, the study utilized the Visual Analogue Scale (VAS) to measure pain intensity over a four-day period. Findings revealed a significant therapeutic impact, with 90% of participants experiencing a marked reduction from severe pain (VAS 7–10) at baseline to mild or no pain (VAS 0–3) by the conclusion of the treatment. Study supporting the homeopathic use of *Plantago major* for its analgesic and anti-inflammatory properties. as a safe, accessible, and cost-effective adjunctive treatment for symptomatic dental relief, particularly in resource-limited settings.

Keywords: *Plantago major*, mother tincture, toothache, homeopathy, external application, visual analogue scale, dental caries.

INTRODUCTION

Oral diseases constitute a major public health concern worldwide due to their high prevalence and significant impact on quality of life. Tooth loss resulting from chronic oral conditions is associated with physical, emotional, economic, and social consequences, including impaired nutrition, speech difficulties, and reduced self-esteem. Toothache (dentalgia) is one of the most frequent orofacial complaints, commonly caused by dental caries, periodontal disease, trauma, abscesses, or cracked teeth. (Shafer, (2006))

Dental caries is an irreversible microbial disease characterized by demineralization of the tooth's inorganic structure and destruction of its organic components, often leading to cavitation. Its prevalence reaches up to 90% in school-aged children in many regions, with adults also significantly affected. Periodontitis, an inflammatory condition of the supporting tissues around the teeth, is primarily driven by bacterial plaque accumulation.

Conventional treatments such as analgesics, antibiotics, fillings, root canal therapy, or extractions can be effective but may involve side effects, high

costs, or limited access, especially in rural or low-resource settings. There is growing interest in safe, natural, and complementary approaches for symptomatic relief.

Plantago major (commonly known as plantain), used traditionally for wounds, inflammation, and pain, holds a prominent place in homeopathic materia medica for dental complaints. The mother tincture (Q potency), prepared from the whole fresh plant, is particularly suitable for external application due to its reported analgesic, anti-inflammatory, and soothing properties. This observational study aimed to evaluate the effectiveness of *Plantago major* mother tincture when applied externally for the relief of painful dental conditions. (Boericke, (2004))

AIMS AND OBJECTIVES:

Aim: To assess the role and effectiveness of *Plantago major* mother tincture as an external application in reducing pain associated with common dental disorders.

Objectives:

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

1. To review the traditional and homeopathic literature on *Plantago major* in dental ailments.
2. To evaluate pain reduction using the Visual Analogue Scale (VAS) before and after treatment.
3. To document patient response and safety of the intervention.
4. To explore its potential as a supportive measure in homeopathic dental care.

Research Question: To find out the effect of Plantago Mother Tincture as External application in alleviating the painful dental complaints.

Hypothesis: Plantago Mother Tincture as external application is effective in painful dental complaints.

Null hypothesis: There is no pain alleviating effect of Plantago Mother tincture as external application in painful dental complaints.

Alternative Hypothesis: There is pain alleviating effect of Plantago Mother Tincture as external application in painful dental complaints.

LITERATURE REVIEW

Anatomy of the Oral Cavity and Teeth

The oral cavity is bounded by the teeth, gums, and jaws. Teeth consist of the crown (visible part), neck, and root (embedded in bone). Structurally, teeth comprise enamel (hardest substance), dentin, pulp (containing nerves and blood vessels), cementum, and the periodontal ligament. The gums (gingiva) protect the underlying alveolar bone and tooth roots. Nerve supply to the teeth and gums is primarily from branches of the trigeminal nerve. (Chaurasia, (2017))

Epidemiology and Causes of Toothache

Toothache is more prevalent in lower socioeconomic groups, individuals with poor oral hygiene, and those with untreated dental caries. Major causes include:

- **Dental caries:** Begins with bacterial acid production (*Streptococcus mutans* and others) that demineralizes enamel, progressing through stages: initial demineralization (white spot), enamel decay, dentin involvement, pulp inflammation, and abscess formation.

- **Periodontal diseases:** Inflammation and destruction of supporting tissues due to plaque.
- **Other conditions:** Cracked teeth, trauma, apical periodontitis, and abscesses.

Symptoms range from mild sensitivity to severe throbbing pain, swelling, and fever.

Visual Analogue Scale (VAS)

The VAS is a simple, reliable tool for measuring pain intensity. It consists of a 10-cm horizontal line anchored by “no pain” (0) and “worst pain imaginable” (10). Patients mark their current pain level, and the distance is measured in millimeters. It is widely used in clinical research for its sensitivity to change.

Homeopathic Perspective

Plantago major was proved by Dr. Alfred Heath. In homeopathy, it is a well-known remedy for toothache, earache, and neuralgic pains. Key indications include toothache better from eating, with profuse salivation, sensitivity to touch, and pain extending to the ears. The mother tincture is suitable for local application in painful dental conditions. (H, 2000) Homeopathy offers a holistic, low-side-effect approach that can complement conventional dentistry.

METHODOLOGY

This prospective observational study was conducted at the Government Homeopathic Medical College & Hospital, Dethali, Siddhpur, Gujarat, during the internship period (October 2024 to August 2025).

Study Design: Prospective observational pre-post intervention study.

Sample Size: 30 patients selected through purposive sampling.

Inclusion Criteria: Adults (18–70 years) presenting with acute or chronic dental pain due to caries, periodontitis, or related conditions.

Exclusion Criteria: Children, pregnant women, patients with oral malignancies, known allergies to the medicine, or those requiring immediate surgical intervention.

Intervention: After detailed case taking and baseline VAS scoring, patients were instructed to apply 2–3 drops of *Plantago major* mother tincture on a cotton pellet to the affected tooth or gum area for 15–20 minutes, 2–3 times daily for 3–5 days. Standard oral hygiene instructions were provided. No standardized internal homeopathic remedies were used to specifically evaluate the topical effect.

Assessment: Pain intensity was measured using VAS at baseline (Day 0), Day 2, and Day 4. Improvement was categorized as significant, moderate, or none. Adverse effects, if any, were recorded.

Data Analysis:

Results are presented in tables and charts (master chart maintained in the original study).

Observations and Results

The study included 30 patients with a slight male predominance (53.3%). The majority were young

adults (15–30 years: 47%). The most common diagnosis was dental caries, followed by impacted wisdom teeth and periodontitis.

Pain Assessment (VAS):

- **Baseline:** Most patients reported severe pain (VAS 7–10).
- **Post-treatment (Day 4):** Marked reduction in pain intensity was observed. The majority shifted to mild pain (VAS 0–3) or complete relief.
- **Overall Improvement:** Approximately 90% of patients showed significant improvement, with rapid relief in pain and associated symptoms such as sensitivity and discomfort.

No adverse reactions or worsening of symptoms were reported. Patients generally expressed satisfaction with the ease of application and symptomatic relief.

Pt Sr. No	VAS scale Before Plantago T/t	VAS scale After Plantago T/t
1	8	0
2	8	1
3	10	2
4	8	0
5	8	2
6	8	1
7	7	2
8	7	0
9	7	2
10	9	5
11	8	1
12	8	0
13	8	0
14	6	2
15	6	2

16	6	1
17	8	2
18	9	1
19	8	2
20	7	1
21	8	2
22	7	1
23	8	4
24	7	0
25	6	1
26	4	2
27	5	3
28	7	2
29	6	1
30	9	2

Statistical analysis (STATISTICSKINGDOM, 2025):

Wilcoxon Signed-Rank-test, using Z distribution (two-tailed)[Validation]

Because the data contains ties, equal differences ($C_{ties} = 18.875$), we use the normal approximation.

1. H_0 hypothesis

Since the $p\text{-value} < \alpha$, H_0 is rejected. The population's change is considered to be not equal to the expected change (0). In other words, the difference between the sample change and the expected change is big enough to be statistically significant.

Hence NULL HYPOTHESIS IS REJECTED

2. P-value

The p-value equals 0.000001659, ($P(x \leq -4.791) = 8.297e-7$). It means that the chance of type I error (rejecting a correct H_0) is small: 0.000001659 (0.00017%). The smaller the p-value the more it supports H_1 .

3. Test statistic

W can get values in the following range: [0, 465] $W^+ = 0$, $W^+ \sim N(232.5, 48.4239^2)$. The test statistic **Z** equals **-4.791**, which is not in the 95% region of acceptance: [-1.96, 1.96].

4. Effect size

The observed effect size r is large, 0.87. This indicates that the magnitude of the difference between the mean ranks is large.

The observed common language effect size is 0, this is the probability that a random value from VAS scale Before T/t is greater than a random value from VAS scale After T/t.

So the changes seen in before and after is not by chance but due to effect of external application of Plantago Mother Tincture

DISCUSSION

The findings indicate that external application of *Plantago major* mother tincture provided substantial and rapid pain relief in most patients with common dental complaints. This supports its traditional and homeopathic use for toothache and inflammatory conditions. The remedy's reported analgesic and anti-inflammatory properties likely contribute to its local soothing effect on irritated nerves and tissues.

Strengths: Simple intervention, use of a validated pain scale (VAS), real-world clinical setting, and good patient compliance.

Limitations: Small sample size, absence of a control group, short follow-up period, and observational design. Results should be interpreted cautiously and not generalized without further validation.

These preliminary findings suggest *Plantago major* mother tincture can serve as a safe, affordable, and accessible supportive option for managing dental pain, especially where immediate dental care is unavailable. It aligns with the growing demand for evidence-informed integrative approaches in oral health.

CONCLUSION

This observational study demonstrates that Plantago major mother tincture, when applied externally, is

effective in significantly reducing pain associated with dental disorders, with excellent tolerability. It offers a promising adjunctive measure in homeopathic practice for symptomatic relief of toothache. Larger randomized controlled trials with longer follow-up are recommended to establish its efficacy more robustly and explore its mechanism of action.

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