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Research Article

Vatika Shiroroga

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Clinical Assessment of Rasnadi Taila Nasya in the Management of Vatika Shiroroga: An Ayurvedic Approach to Tension-Type Headache

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Tension-type headache (TTH) or Vatika Shiroroga exerts a considerable socioeconomic burden through reduced productivity, compromised work efficacy, and diminished quality of life, despite its non-fatal nature. The allopathic management strategies for TTH adversely affect patients including habituation, medication overuse headache; cognitive impairment, gastrointestinal disorders, and metabolic disturbances. To overcome these limitations alternative therapeutic approaches such as Ayurveda can be used. The objective of the present study is to develop a safe, cost-effective, and comprehensive therapeutic protocol using Rasnadi Taila Nasya for patients suffering from Vatika Shiroroga. Thirty patients were selected for the clinical study. Treatment efficacy analysis revealed complete remission in 30% of patients, marked improvement in 50%, moderate improvement in 13.33%, and mild improvement in 6.67%. Rasnadi Taila Nasya serves as an effective natural remedy for tension-type headaches, offering relief through its soothing, anti-inflammatory, and muscle-relaxant properties.

Keywords: Nasya, Rasnadi Taila, Tension-type headache, Vatika Shiroroga

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Introduction

Tension-type headache (TTH) is one of the most prevalent diseases, affecting approximately 1.04 billion individuals worldwide according to the study carried out by the Global Burden of Disease Study in 2019. This significant occurrence has made TTH the third most common medical condition worldwide.**[1]** The International Classification of Headache Disorders (ICHD) define tension-type headache as a sensation of tightness or pressure across the forehead or cranial regions accompanied by tenderness in the scalp, cervical, and shoulder musculature. The TTH exerts a considerable socioeconomic burden through reduced productivity, compromised work efficacy, and diminished quality of life, despite its non-fatal nature. The modern lifestyle characterized by increasing competitiveness, occupational stress, psychological pressures, and socioeconomic challenges has substantially contributed to rising incidence of this condition across diverse demographic groups.**[2]**

Contemporary epidemiological data reveal that over 80% of TTH cases are associated with depression and anxiety, highlighting the psychosomatic nature of this disorder. Particularly vulnerable are adolescents and young adults navigating educational pressures and career uncertainties, who frequently experience stress-induced headaches. Current allopathic management strategies for TTH primarily utilize analgesics and prophylactic medications, which provide transient symptomatic relief but frequently fail to address the underlying pathophysiology. Furthermore, prolonged pharmacotherapy is associated with significant adverse effects including habituation, medication overuse headache, cognitive impairment, gastrointestinal disorders, and metabolic disturbances. These limitations have prompted patients to seek complementary and alternative therapeutic approaches that offer improved safety profiles and comprehensive management options.

From the Ayurveda perspective, the world's oldest documented healing system originating approximately 5,000 years ago in India, headache disorder is named as *Shiroroga* or *Shirovedna*. Ayurvedic researchers such as Acharya Charaka, Vagbhatta, and Sushruta classified headaches into five, ten, and eleven distinct types of *Shiroroga,* respectively.**[3,4,5]**

Among these classifications, *Vatika Shiroroga* is particularly relevant to TTH due to their striking similarities. *Vatika Shiroroga* is characterized by groups of symptoms including dizziness, otalgia, ocular discomfort, cephalgia, excessive throbbing in the venous plexus (*Sirajaal*), cervical rigidity, and idiopathic pain patterns according to *Charaka Samhita.***[3]** The patients also report paradoxical spontaneous relief without apparent cause and derive comfort from mechanical interventions such as head bandaging or thermotherapy. The etiopathogenesis of *Vatika Shiroroga* is attributed to vitiation of *Vatadosha*, potentially accompanied by secondary involvement of *Pitta* or *Kapha Dosha*. Ayurvedic principles emphasize "*Nidanaparivarjanam*" (avoidance of causative factors) as the primary intervention for any disorder, **[6]** underscoring the importance of addressing psychological stressors, anxiety, and emotional disturbances in TTH management. Beyond this foundational approach, Ayurveda offers specialized therapeutic modalities specifically designed for cephalic disorders, with *Nasya Karma* occupying a position of particular significance in this context. *Nasya Karma* represents a sophisticated treatment methodology for disorders affecting structures above the clavicle (*Urdvajatrugata*), with particular efficacy in conditions affecting the head region.**[7]** This therapeutic approach involves the administration of medicaments through the nasal route, based on the anatomical understanding that the nasal cavity serves as a direct gateway to cerebral structures.**[8]** When medications are administered through this route, they achieve rapid absorption through the highly vascular nasal mucosa and reach the brain (*Mastishka*) via multiple pathways including capillaries, veins, and neural routes through the olfactory and trigeminal systems.

Rasnadi Taila is an Ayurvedic herbal oil indicated to relieve headaches.**[3]** The *Rasnadi Taila* is formulated with a combination of several herbs, as shown in Table 1. The study elucidates the pharmacodynamic mechanisms underlying *Rasnadi Taila* efficacy in *Vatika Shiroroga* (tension-type headache). Pain, a pathognomonic sign of *Vatadosha*, manifests through qualities like *Ruksha* (dryness), *Sheeta* (coldness), and *Chala* (mobility). *Rasnadi Taila* counters these through its *Guru* (heavy), *Snigdha* (unctuous) and *Usnaveerya* (hot potency).

Symptoms like *Bhrumadhyetapa* and *Lalatatapa Ativedna* result from *Pitta Dosha* association with *Vata*, characterized by *Ushna* (hot), *Teekshna* (sharp), and *Sara* (mobility) properties. *Rasnadi Taila* constituents demonstrate multiple therapeutic actions such as *Rasna* provides anti-inflammatory, analgesic, and *Aampachak* (metabolic) effects; *Shalparni* exhibits anti-inflammatory properties; *Prushparni* acts as a nervine tonic; while *Gokuru, Kantakari*, and *Brihati* contribute analgesic and anti-inflammatory effects. The formulation's *Tila Taila* base, through its *Sukshma* (subtle), *Teeksna* (penetrating), and *Vyavayi* (diffusive) characteristics, penetrates *Margavroda* (channel blockages) and efficient delivery to target tissues. **[9]**

Table 1: List of herbs used in the formulation of *Rasnadi Taila*

Drug	Botanical name	Part used	Quantity
Rasna	Plunchea lanceolate	MulaTwak	1part
Salparni	Desmodium gangeticum	Panchanga	1part
Prisniparni	Uraria picta	Panchanga	1part
Vartaki	Solanum indicum	Panchanga	1part
Kantakari	Solanum surattense	Panchanga	1part
Goksura	Tribulus terrestris	Seeds	1part
TilTaila	Sesamum indicum	Taila	Q.S.
Cow Milk		Ksheer	Q.S.

The present study has been conceptualized with the objective of developing a safe, cost-effective, and comprehensive therapeutic protocol for patients suffering from *Vatika Shiroroga*/TTH that provides both immediate symptomatic relief and sustainable long-term benefits with minimal adverse effects. The investigation aims to evaluate the clinical efficacy of *Rasnadi Taila Nasya* in alleviating both physical symptoms and psychological components of this condition, thereby addressing the multifactorial nature of tension-type headache and improving overall quality of life for affected individuals.

Materials and Methods

Preparation of *Rasnadi Taila*

Rasnadi Taila was prepared according to the classical *Siddha Sneha Kalpana* methodology described by Acharya Sharangadhara.**[10]** The formulation utilized a standardized ratio of ingredients: *Tila Taila* (sesame oil) 1 part (720 ml), *Kalka* (herb paste) 1/8 part (90 g), water 4 parts (2880 ml), and cow's milk 4 parts (2880 ml).

The *Kalka* comprised six medicinal herbs in equal proportions (15g each): *Rasna, Salaparni, Prisniparni, Vartaki, Kantakari,* and *Gokshura*. The preparation followed multi-day process. On day one, *Murchit Tila Taila* procured from the Rasashastra pharmacy was placed in a suitable vessel. The prepared *Kalka* and measured water were added and subjected to controlled heating on low flame. Upon reaching the boiling point, cow's milk was added, and heating continued until significant water evaporation occurred, at which point the process was suspended until the following day. On the subsequent day, heating resumed and continued until the preparation exhibited *Samyak Sneha-Paka Lakshana* for *Mridu Paka*, characterized by softened *Kalka* with wick-like consistency (*Vartivat*) and minimal presence of extractable constituents. The medicated oil was then filtered and stored in sealed sterile containers. Quality control measures included comprehensive analysis at S.R. Labs & Research Centre, Jaipur, encompassing physicochemical parameters, heavy metal detection, and microbiological testing. Following confirmation of compliance with safety standards, the *Rasnadi Taila* was repackaged in 10ml containers for standardized clinical administration.

Criteria of patient selection

Thirty patients were selected from the O.P.D. and I.P.D. of the Department of *Shalakya* at the Government Ayurvedic College and Hospital, Patna for the clinical study. These patients were enrolled in the I.P.D. for a procedure aimed at minimizing *Nidana Sevan*. A detailed case sheet proforma was developed for the study after gathering supraclavicular and systemic history.

Criteria for diagnosis

Patients aged from 14 to 32 years with signs and symptoms of *Vatika Shiroroga* (TTH) as described in both Ayurvedic and Modern text were included in the study. The diagnosis of the disease was based on clinical manifestations, which were predominantly bilateral in nature and primarily located in the temporal, frontal, occipital, and frontal-occipital regions. Patients often experienced headaches that increased by the end of the day, along with other signs and symptoms detailed in the accompanying texts. Detailed clinical history was taken and complete physical examinations were done on the basis of a case sheet incorporating the signs and symptoms of *Vatika Shiroroga* (TTH).

Plan of study

A clinical study involving 30 patients diagnosed with *Vatika Shiroroga* was conducted at GACH, Patna. Treatment efficacy was assessed on day 7, with a follow-up on day 30, resulting in a one-month trial duration for each patient. Data analysis was performed using Wilcoxon "Z" test. The study began after obtaining Institutional Ethics Committee approval and CTRI registration (CTRI/2023/03/050177). Written informed consent was taken from all patients at the time of registration before initiating treatment.

Trial drugs preparation

The ingredients for the preparation of the formulation were collected from genuine sources. *Rasnadi Taila* was prepared in the Pharmacy Department of Government Ayurvedic College and Hospital, Patna, following standardized processing of raw materials. The intervention consisted of *Nasya* (nasal administration) of *Rasnadi Taila* at a dose of 8 drops per nostril, administered daily for7-days period.

Criteria of Assessment

A comprehensive documentation was maintained for all 30 trial patients. The efficacy of the therapy was evaluated using both subjective and objective parameters through a multi-dimensional scoring approach. Pain assessment utilized a dual methodology, combining Visual Analogue Scale (VAS) with a 4-point Visual Rating Scale (VRS) and a standardized pain questionnaire. Psychometric assessments were evaluated using validated instruments including Hamilton's Anxiety Rating Scale (HAM-A) and Hamilton's Depression Rating Scale (HDRS), to quantify anxiety and depression elements associated with *Vatika Shiroroga*.

Results and Discussion

In the present study, 30 patients in the age group of 14-32 years were included, out of which 16 are male and 14 are female. The majority of patients belong to *Vata, Pitta and Rajasika Prakriti* and had insidious onset, temporal-occipital headache, bilateral, non-pulsatile, moderate headache, increased in evening and chronicity between 6 to 12 months. Most of the patients had disturbed sleep, having irregular bowel habits and irregular dietetic habits. *Atisheetajala-Sevena*, *Vega Dharana, Chinta*, *Ratri-Jagran*, *Divaswapna* were observed as *Nidanas* in the majority of patients. All the patients reported *Shirovedna* (headache) as chief complaint, 70% patients reported *Ghatasambidhyate* (Stiffness of neck and shoulder). 86.67% patients reported difficulty in concentrating, 83.33% patients reported disturbed sleep, 30% of patients had reported having photophobia and giddiness was found in 43.33 % of patients and 3.33%of the patients found having phonophobia. The patients treated with *Rasnadi Taila Nasya* are shown in Table 2. The assessment of symptoms was done for each patient before and after treatment in the clinical trial. All patients of *Vatika Shiroroga* show *Shirovedna* in various grades. The symptoms of *Vatika Shiroroga* are graded 0 to 3 score for each symptom per patient. 0 was no symptom complaint by the patient and 1 to 3 grade gradually increased symptom according to severity. Most of the patients were showing anxiety, depression, sleep disturbance and lack of concentration and achieved maximum relief and statistically significant results by *Rasnadi Taila Nasya*. The patients treated with *Rasnadi Taila Nasya* was found that therapy provided statistically highly significant relief in *Shirovedna*, *Bhru Madhya Lalattapa Ativedna*75%, *Shirahghurnanam* 76.90%, disturbed sleep 86.70 %. Anxiety 81.12 %, depression 78.98% and lack of concentration 84.42%. Significant relief in *Shirovedna* 67.93% and *Nishitivra Vedna* 69.79%. The results demonstrated statistically significant improvements ($p<0.001$) across multiple symptoms, with headache (*Shirovedna*) showing 67.93% reduction, neck/shoulder stiffness (*Ghata Sambidhyate*) 80.07%, and evening/night pain (*Nishicatimatram*) 69.79%. Neurological symptoms, including giddiness (*Shirahghurnanam*) improved by 76.90%. Psychosomatic manifestations showed marked improvement: fatigue decreased by 83.93%, anxiety by 81.12%, depression by 78.98%, sleep disturbances by 86.70%, and concentration difficulties by 84.42%. Minor symptoms like ear ringing (*Swanatah Srotre*) and phonophobia showed limited response. The therapeutic mechanism appears to involve the *Vatahar* (*Vata*-pacifying) and *Vednashamak* (pain-relieving) properties of the medications, with rapid absorption through nasal administration targeting brain centers and potentially regulating stress hormones like cortisol, thereby addressing both physical and psychological components of the condition.

Table 2: Effects of *Rasnadi Taila Nasya* on *Vatika Shiroroga*

Symptoms		Grade 0		Grade 1		Grade 2		Grade 3	
		In no.	In %	In no.	In %	In no.	In %	In no	In %
Shirovedna (Pain in head)	BT	0	0	3	10 %	13	43.33	14	46.67
	AT	6	20 %	20	66.67	4	13.33	0	0
Ghata Sambidhyate (Stiffness in neck region)	BT	9	30 %	17	56.67	4	13.33	0	0
	AT	19	66.33	10	33.33	1	3.33	0	0
Nishitivra Vedna (Intense pain in night)	BT	13	43.33	0	0	8	26.67	9	30 %
	AT	15	50 %	12	40	3	10	0	0
Bhru Madhya, Lalata Tapa Ativedna (Intense pain and warm in forehead)	BT	18	60 %	12	40 %	0	0	0	0
	AT	26	86.67	4	13.33	0	0	0	0
Swanatah Srotre (Ringing of ear)	BT	28	93.33	2	6.67	0	0	0	0
	AT	28	93.33	2	6.67	0	0	0	0
Shirahghurnanam(Dizziness)	BT	17	56.67	13	43.33	0	0	0	0
	AT	27	90 %	3	10 %	0	0	0	0
Shirajaalm Spurana (Pulsation in head)	BT	27	90%	3	10%	0	0	0	0
	AT	29	96.67	1	3.33	0	0	0	0
Nausea	BT	27	90%	3	10%	0	0	0	0
	AT	28	93.33	2	6.67	0	0	0	0
Photophobia	BT	21	70%	9	30%	0	0	0	0
	AT	26	86.67	4	13.33	0	0	0	0
Phonophobia	BT	29	96.67	1	3.33	0	0	0	0
	AT	30	100%	0	0	0	0	0	0
Fatigue	BT	5	16.67	19	63.33	6	20%	0	0
	AT	23	76.67	7	23.33	0	0	0	0
Anxiety	BT	15	50%	15	50%	0	0	0	0
	AT	25	83.33	5	16.67	0	0	0	0
Depression	BT	11	36.67	19	63.33	0	0	0	0
	AT	22	73.33	8	26.67	0	0	0	0
Sleep Disturbed	BT	5	16.67	20	63.33	5	16.67	0	0
	AT	22	73.33	8	26.67	0	0	0	0
Lack of Concentration	BT	4	13.33	20	63.33	6	20%	0	0
	AT	23	76.67	7	23.33	0	0	0	0

The result revealed the effect of therapies assessed that VAS, symptoms score, HAM-A and HDRS score are shown in Figure 1. The study's quantitative assessments demonstrated statistically significant improvements across all standardized measurement scales. The Visual Analog Scale (VAS) for pain severity showed a 77.08% reduction (from 6.100 to 1.733, $p<0.001$), indicating substantial pain relief.

Psychiatric evaluations revealed marked improvements in anxiety and depression, with the Hamilton Anxiety Rating Scale (HAM-A) decreasing by 64.63% (from 9.233 to 3.266, $p<0.001$) and the Hamilton Depression Rating Scale (HDRS) improving by 65.80% (from 8.966 to 3.066, $p<0.001$). The combined symptoms score demonstrated a 70.92% overall reduction (from 12.566 to 3.733, $p<0.001$).

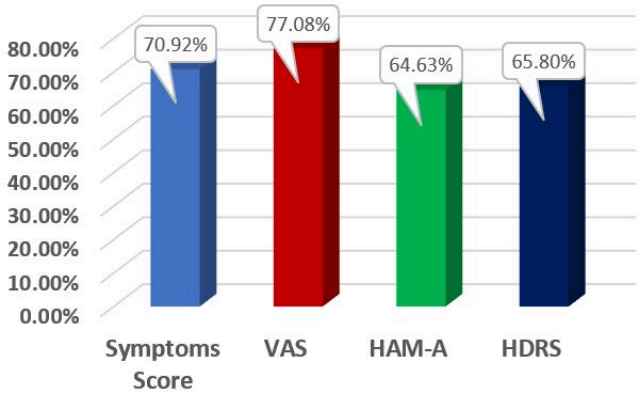

Figure 1: Effect of *Rasnadi Taila Nasya* on assessment criteria after treatment

Treatment efficacy analysis revealed complete remission in 30% of patients, marked improvement in 50%, moderate improvement in 13.33%,

And mild improvement in 6.67% (Figure 2). These findings collectively demonstrate that *Rasnadi Taila Nasya* provides comprehensive therapeutic benefits in *Vatika Shiroroga* (TTH), effectively addressing both pain and associated psychosomatic components.

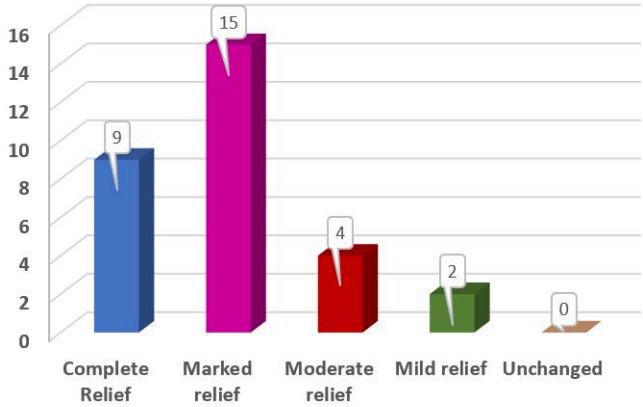

Figure 2: Effect of *Rasnadi Taila* on *Vatika Shiroroga* after treatment

Modern neurophysiological interpretation suggests *Rasnadi Taila* may modulate hypothalamic and trigeminal pathways, inhibiting nociceptive signals. Administration via nasal route facilitates rapid absorption through nasal mucosa, enhancing bioavailability through local capillaries, olfactory, and trigeminal nerve pathways, thereby providing superior efficacy compared to oral administration. *Rasnadi Taila* plays a significant role in the management of *Vatika Shiroroga.*[11] The effect of absorbed drugs administered by *Nasya Karma* is not only limited to the nasal or paranasal area, as the excess medicine reaching to the throat is to be spit out by the patient but also alleviates the vitiated *Doshas* regarding its *Prabhava*. The postures in the procedure and fomentation and massage on the face during *Nasya Karma* may have an impact on the neurovascular junction and drug absorption. The stimulation of the olfactory nerve may affect neuro-endocrinal and neuropsychological levels. This reduces tension and anxiety that have been stored in the primary governing center of our bodies by having a calming impact on the brain and entire nervous system, insomnia and headache.

Conclusion

The increasing prevalence of *Vatika Shiroroga* (TTH) is a major global burden because it affects person's quality of life, personal and social relationships, work ability, and working hours.

Our study demonstrates that all patients experienced relief from various symptoms related to *Vatika Shiroroga* without any adverse effects from *Rasnadi Taila Nasya*. It serves as an effective natural remedy for tension-type headaches, offering relief through its soothing, anti-inflammatory, and muscle-relaxant properties. *Rasnadi Taila Nasya* can help reduce stress-induced headaches, improve circulation, and restore balance to the nervous system. As a part of holistic Ayurvedic management, *Rasnadi Taila* can be combined with lifestyle modifications, relaxation techniques, and dietary adjustments to achieve long-term relief from tension-type headaches.

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