ORIGINAL RESEARCH PAPER

Ayurveda

A CLINICAL STUDY ON THE EFFECT OF TAKRADHARA (SHIRODHARA) IN SUBCLINICAL HYPOTHYROIDISM

KEY WORDS: Subclinical Hypothyroidism, Takradhara (shirodhara)

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ABSTRACT

Takradhara is a procedure, where medicated butter milk is poured over head or body in a specified manner this study has been planned to assess the effect of Takradhara in patients with SCH as an initial phase.

Method: The study population was 30 patients from OPD and IPD from the Swasthavritta department Govt. Ayurveda College Tripunithura, Ernakulam. Purposive sampling method is using to selection of sample. Duration of Takradhara treatment was 7 days. Assessment was done before treatment and Follow up was done 30th, 60th and 90th days (After treatment 37th, 67th and 97th days)

Result & Discussion: After 7 days of Takradhara treatment, assessment was done during follow up periods, there was significant levels of reduction in TSH ,Here p-values less than the significance level 0.05 ($P<0.05$)

Conclusion: Takradhara treatment was effective in normalizing the raised TSH levels and in relieving the associated symptoms

INTRODUCTION

Hypothyroidism is a common disorder in which the gland fails to produce enough thyroid hormone. In India estimated prevalence of thyroid disorders is more than 42 million, hypothyroidism being commonest. Subclinical hypothyroidism affects 3-15% of the adult population, approximately 2% of children. High incidence seen in women and the elderly. In Subclinical hypothyroidism, Free T4 and Free T3 are in normal range with an elevated TSH[1]. By doing Takradhara which can stimulate hypothalamus and there by normalizing the action of pituitary and thyroid gland. It will be highly beneficial to patients who suffering from subclinical hypothyroidism. This study aims on secondary prevention that is "an action which halts the progress of a disease at its incipient stage and prevents complications [2]

METHODOLOGY

Research question

Does Takradhara possess significant role in patients having subclinical hypothyroidism?

Objective of the study

To find out the effect of Takradhara in reducing subclinical hypothyroidism in patients with 20-50 years of age group.

Hypothesis

Null hypothesis: Takradhara (Shirodhara) is not having significant role in subclinical hypothyroidism of age group 20- 50 years.

Alternate Hypothesis: Takradhara (shirodhara) is having significant role in subclinical hypothyroidism of age group 20-50 years.

Study design: Interventional before after trial without control

Inclusion criteria

- Subject of both genders among the age group 20 to 50 years.
- Subject who were having a change in serum TSH level in between 4.5mlU/L to 10mlU/L, with normal free T3 and free T4
- Subject with informed consent.

Exclusion criteria

- Patients who are under Allopathic Hypothyroid medication
- Pregnant ladies
- Patients contraindicated for Takradhara (Shirodhara)
- Hashimotos Thyroiditis.
- CA of Thyroid

Preparation of medicine

Medicated takra

One day prior to dhara, 1.5 litre of milk along with 4 times of water (6 litre) is taken in a vessel. 100gm of skinned and crushed musta tied in a muslin bag and is reducing to the original quantity of milk (1.5 litre). The bag of medicament is taken out and squeezed well. When cooled, this prepared milk is fermented by the addition of a little sour buttermilk overnight. Next morning the fermented medicated curd is churned by adding 500ml of amalaki kwatha. The butter is removed completely, and this mixture is used for dhara after filtering.[3]

Amalaki kashaya

200 gm of dried amalaki fruit boiled with 8 litre of water and reduce to 2 litres. While churning 1.5 litre of amalaki Kashaya is mixed with buttermilk and 500 ml of that is used to wash the head of the patient after takradhara.[4]

Duration of treatment: 45 min. for 7 days
Time: 9 am-11 am / 4pm to 6 pm

Study tools : Laboratory investigation for Serum TSH, Free T3, Free T4 done before treatment and during follow up periods (0th ,30th, 60th, and 90th days) Anti TPO test (for excluding Hashimotos Thyroiditis) done before treatment

Assesments: Both subjective and objective parameter, Assessment will be done by appropriate test before treatment and during follow up periods (0th, 37th, 67th and 97th days)

Follow up: Follow up will be done 30th, 60th and 90th days (After treatment 37th, 67th, 97th days)

Objective criteria: Reduction of raised serum TSH in to a normal range, that is in between 0.45-4.5 mIU/L

Outcome variables: Reduction of raised serum TSH in to a normal range, that is in between 0.454.5 mlU/L

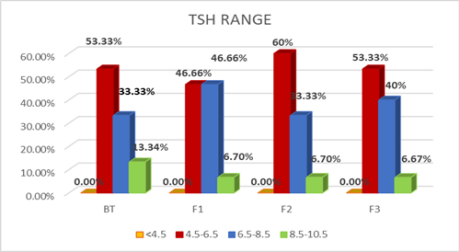
Takradhara treatment

RESULTS

The paired't' test was applied to calculate TSH values before and after Takradhara treatment and to find out its effect in patients

Serum TSH

TSH ranges	<4.5	4.5-6.5mlU/L	6.5-8.5mlU/L	8.5-10 mlU/L
BT	0(0.0%)	16 (53.33%)	10 (33.33%)	4 (13.34%)
F1	0(0.0%)	14 (46.66%)	14 (46.66%)	2 (6.67%)
F2	0(0.0%)	18 (60%)	10 (33.33%)	2 (6.67%)
F3	0(0.0%)	16 (53.33%)	12 (40%)	2 (6.67%)



In this study before treatment, patient in the range of 4.5 to 6.5 was 16 ,6.5 to 8.5 was 10 and 8.5 to 10 was 4 First follow up- 2 patients from the range 4.5 to 6.5 had slight increase in TSH, there was 2 person was gone to next range 6.5 to 8.5, The highest range group 8.5 to 10 (2 had slight decrease in their TSH values and had come under range 6.5 to 8.5)

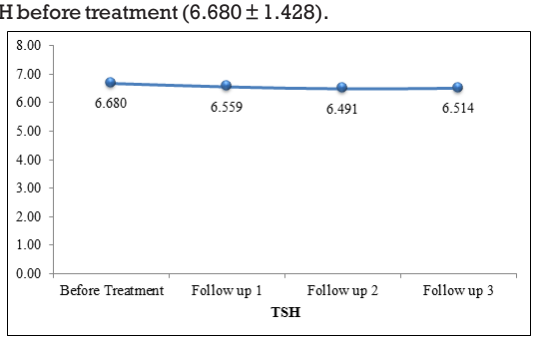
Second follow up- Comparatively better result were seen, that 18 0f the total patient had come under the group 4.5 to 6.5, there was a mass change in TSH of the range of 6.5 to 8.5

Third follow up- The group of 4.5 to 6.5, 2 of them had slight increase in TSH and had gone to the range 6.5 to 8.5

Over all the treatment could bring about considerable change in the TSH value and was effective in bringing down the raised TSH values.

TSH	Mean	SD	Difference	t - value	p - value
Before Treatment	6.680	1.428			
Follow up 1	6.559	1.317	0.121	2.568	0.016
Follow up 2	6.491	1.113	0.189	2.294	0.029
Follow up 3	6.514	1.239	0.167	2.502	0.018

Here all the p-values are less than the significance level 0.05; the difference in TSH after treatment is significant. That is, there is a significant difference in TSH after treatment. The table reveals that the TSH is significantly reduced after first follow up (6.559 ± 1.317), after second follow up (6.491 ± 1.113) and after third follow up (6.514 ± 1.239) compared to TSH before treatment (6.680 ± 1.428).



Difference in TSH after Treatment

DISCUSSION

Discussion on role of Takradhara

Ayurvedic approach to any disease is Psychosomatic in nature. Dhara is one of the main therapies in Ayurveda for psychosomatic diseases. Takradhara helps in regulating both Sharirika and Manasika dosha. Takradhara is widely practiced treating psychosomatic disorders. Hypothyroidism is one of the psychosomatic disorders. It calms the mind and relaxes entire physiology of the brain, so it alleviates stress, strain and anxiety. Stress is the major symptoms of Hypothyroidism and stress is increasing nowadays because of modern life style

Takradhara can stimulate hypothalamus and there by normalizing the action of pituitary and thyroid gland. It will be highly beneficial to patients who suffering from subclinical hypothyroidism. HPA axis (hypothalamic pituitary adrenal axis) is our central stress response system. Control stress and regulate many body processes, including digestion, immune system, mood emotions, sexuality and energy storage. While doing Takradhara HPA axis may stimulate and control cortisol level.[5]

Discussion on Ayurvedic view of point

Direct reference of hypothyroidism is not available in Ayurvedic classics. Many of the symptoms are seen in this condition can be related with kaphaja dushti, Galaganda, Kapha vridhi, Dhatvagnimandya, Rasadhathu vikriti, Kapha avarana. The main symptoms show vitiation of Kapha dosha (mainly) and vata dosha. The main dushya involved are Rasa (dominantly) and meda. The treatment which brings down vitiated Kapha and vata, also which corrects the Dhatus is important. Shamana, Shodhana, Agni deepana these all are choices of treatments.[6]

Discussion on drug action

The combination of Amalaki, Musta and Takra produces a coolant effect on the brain and the whole nervous system and hence releases the stress and anxiety stagnant in the chief controlling station of our body. Sitha virya drugs may stimulate in hypothalamus. Due to cold environment hypothalamus got soothening effect.

The master gland Pituitary gland and the hypothalamus associated with many physical and mental functions are in the head. When all these are relaxed, the body functions including the heart functions take place in a relaxed manner. The circulation of blood and nutrients take place in a proper way. The peripheral resistance is reduced. The channels of the body open. The cells start flushing the toxins and overall metabolism gets improved.[7]

Hypothyroidism is the avarana nature disease; Takradhara is vatakapha samana therapy which brings rookshana nature. Rukshana nature and hormonal regulation may be cure the avarana nature. Takradhara might communicate with the deepest recesses of the brain by soothing the Marmas. Takradhara is highly effective in relieving stress. When stress is removed the psychosomatic disorders like Thyroid dysfunction, psoriasis etc. are subjected to an effective healing. It has a soothing effect on the endocrine system. Takradhara is improves the supply of blood and nutrition. The pressure and temperature effect of the medicaments cannot be ruled out.[8]

Discussion on Procedural Effect of the Process:

The procedural effect of shirodhara itself seems to produce a relaxation response irrespective of the medicament used. In almost all the methods of relaxation like yoga, meditation, etc. similar general principles prevail. One involves efforts and concentration focusing attention upon an object or sensation and the other simple watchfulness and observation allowing fine flow of perception. In shirodhara, patients feel relaxation both –physically as well as mentally. Relaxation of the frontalis muscle normalize the entire body and achieve a decrease in activity of sympathetic nervous system with lowering of heart rate, respiration, oxygen consumption, blood pressure, the brain cortisone and adrenaline level, muscle tension and

probably an increase in alpha-brain waves. It strengthens the mind, and spirit and this continues even after the relaxation.[9]

Effect in Serum TSH levels

The study indicates that Takradhara is effective in reducing the raised Serum TSH levels. By analyzing the results, Takradhara results in statistically significant reduction in TSH without altering the thyroid hormone level and its control mechanisms by a base level correction of disease, which is the method of Ayurveda in all treatment approaches.

Effect in FreeT4 and FreeT3

In the study all the 30 patients showed normal values of FreeT4 and FreeT3 before treatment, after 37th day, after 67th day after 97th day of follow up periods. All of them had a normal hormone range. This indicates that along with the reduction in Serum TSH levels, Takradhara treatment is helpful in maintaining the levels of thyroid hormones in a normal range.

CONCLUSION

- The Takradhara treatment was effective in reducing the elevated levels of TSH in Subclinical hypothyroidism.
- There was significant reduction in majority of symptoms presented by the patients.
- The sustained effect is maintained during follow up periods.
- The Takradhara treatment has a great role in balancing the endocrinal function.
- Null hypothesis is rejected, and alternated hypothesis is accepted.

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