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Review Article

ROLE OF YOGA IN PREVENTION OF HYPOTHYROIDISM

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ABSTRACT
Hypothyroidism is a condition characterized by abnormally low thyroid hormone production. There are many disorders that result in hypothyroidism. These disorders may directly or indirectly involve the thyroid gland. Because thyroid hormone affects growth, development and many cellular processes, inadequate thyroid hormone has widespread consequences for the body. Since hypothyroidism develops from a shortage of thyroid hormone, the most effective treatment is generally thyroid hormone supplementation. Although treatment provides the necessary hormone control, hypothyroidism often continues throughout life, and the patient may require lifelong follow-up and medication to control the condition. Yoga is one of the few natural remedies that have shown promise as prevention and treatment for hypothyroidism. By stimulating the function of the thyroid, pituitary, pineal and adrenal glands, yoga prevents its damage. There are certain asanas, pranayamas and bandhas which shows tremendous effects on thyroid gland which will be discussed in full paper.
Keywords: hypothyroidism, consequences on health, natural remedies.

INTRODUCTION

An estimated 108 million people in India suffer from endocrine and metabolic disorders. Several of these diseases are caused by environmental factors; therefore, their prevalence is several-fold higher. Thyroid disorders are the most common among all the endocrine diseases in India. Imbalance in production of thyroid hormones arises from dysfunction of the thyroid gland itself, the pituitary gland, which produces thyroid-stimulating hormone (TSH), or the hypothalamus, which regulates the pituitary gland via thyrotropin-releasing hormone (TRH). Thyroid disorders can range from a small, harmless goiter (enlarged gland) that needs no treatment to life-threatening cancer. The most common thyroid problems involve abnormal production of thyroid hormones. Insufficient hormone production leads to hypothyroidism. Since hypothyroidism develops from a shortage of thyroid hormone, the most effective treatment is generally thyroid hormone supplementation. Supplements are either natural hormones extracted from the thyroid glands of animals or synthetic hormones (such as levothyroxine). Although treatment provides the necessary hormone control, hypothyroidism often continues throughout life, and the patient may require lifelong follow-up and medication to control the condition. In case of hypothyroidism, most of the yoga techniques help to stimulate thyroid glands and thus improve their overall function by helping them work at their optimal levels. So it is a modest attempt to make people aware of how yoga can help in prevention of hypothyroidism.

Incidence

Thyroid diseases are common worldwide. In India too, there is a significant burden of thyroid diseases. According to a projection from various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases.[1] In India; Iodine deficiency disorders account 27 per 1000 where as Grave's disease accounts 5 per 10,000. One in every eight women during their life time has risk for thyroid disorder. Hypothyroidism is more common in women than in men and is very common in older women.[2]

Causes of hypothyroidism

- Autoimmune:-
  Hashimoto's thyroiditis.
  Grave's disease with TSH receptor- blocking antibodies.
- Iatrogenic:-
  Radioactive iodine ablation
  Thyroidectomy
  Drugs – carbimazole, methimazole, amiodarone, lithium.
- Transient thyroiditis.
- Iodine deficiency.
- Congenital.
- Infiltrative.
- Secondary hypothyroidism[3]

Symptoms and signs

	Symptoms	Signs
General	Weight gain, Cold intolerance, Fatigue	Weight gain, Goiter, Hoarse voice
Gastrointestinal	Constipation	Ascites
Cardio respiratory	-----	Bradycardia, Hypertension
Hematological	Lymphadenopathy	Macrocytosis, Anaemia
Neuromuscular	Carpel tunnel syndrome, Aches and pains, Muscle stiffness, Deafness, Depression.	Delayed relaxation of tendon reflexes, Cerebellar ataxia, Myotonia[4].
Dermatological	Dry skin, Dry hair, Alopecia	Myxoedema, Purplish lips
Reproductive	Menorrhagia, Infertility.	-------
Ocular		Periorbital oedema.

Investigations

In the most common form of hypothyroidism, namely primary hypothyroidism, resulting from an intrinsic disorder of thyroid gland, serum T_4 is low and TSH elevated, usually in excess of 20 mU/l. In rare secondary hypothyroidism there is an atrophy of inherently normal thyroid gland caused by failure of TSH secretion. Serum T_4 is low but TSH may be low, normal or even slightly elevated. In severe prolonged hypothyroidism the ECG classically demonstrates bradycardia with low voltage complexes and ST segment and T wave abnormalities.[5]

Modern treatment and its drawbacks

It will require lifelong thyroxine therapy. It is customary to start slowly and a dose of 50 ug/day for 3 weeks, increasing thereafter to 100 ug/day for 3 weeks and finally to maintenance dose of 100-150 ug/day for rest of the life with regular fallow ups and blood checkups. Hypothyroidism often continues throughout life, and the patient may require lifelong follow-up and medication to control the condition. Additionally, postmenopausal women who take large doses of thyroid hormones may be at risk for accelerated bone loss. Sometimes another drug blocks absorption of the thyroid hormone e.g. Iron, it interferes with absorption even at doses found in multivitamins. Thyroid hormone may be broken down faster in the presence of drugs such as dilantin, tegretol and rifampin.[5]

Importance of Yoga in Hypothyroidism

Yoga is an alternative system of healing, its power being widely harnessed to prevent and treat Hypothyroidism. Yoga is undoubtedly a reliable avenue for holistic health. Yoga not only serve as a helpful therapy in relieving existing symptoms, but also act in the management of hypothyroidism and prevention of further damage to thyroid gland. Many of the thyroid disorders occur due to excessive stress. Yoga can help alleviate stress and anxiety to a great extent. This practice is also useful in maintaining the right balance between the mind and the body. Some of the other benefits of yoga include –

- Massaging and stimulating the thyroid gland
- Improving circulation all over the body
- Reducing stiffness

Asanas useful in Hypothyroidism are

- Sarvangasana
- Matsyasana
- Marjarasana
- Halasana
- Bhujangasana

Sarvangasana (Shoulder stand)

Sarvangasana, the Sanskrit name for the Shoulder stand, comes from the word "sarva", meaning whole. This Asana strengthens your entire body; it gives many of the benefits of the Headstand, but here the circulation is directed to your thyroid gland instead of the head. Lying on the back with the hands under the mid-back, the legs and lower body are lifted so that the weight of the body is supported on the head, neck, shoulders and upper arms. The gaze is towards the toes and the sagittal and transverse line of the head is perpendicular with the mid sagittal and mid frontal line of the body. By turning the body upside down it allows blood to flow into the neck and head faster than normal while compressing the neck. As one is released from the pose, the neck is full of blood and this blood helps to nourish and stimulate the thyroid gland.[6]

Matsyasana (Fish pose)

The asana is a backbend, where the practitioner lies on his or her back and lifts the chest by rising up on the elbows and drawing the shoulders back. The neck is lengthened, and the crown of the head is pointed toward the floor. As the arch of the back deepens with practice, the blood circulation at thyroid gland improves. It relieves tension in your neck and throat region. It stretches and stimulates thyroid gland and gives good massage to it.[7] Sarvangasana and Matsyasana are complementary asanas for each other. When these asanas are done alternately, they give compression and stretch to thyroid gland. It gives good exercise to it and improves its functioning.

Marjarasana (Cat pose)

In Marjarasana you have to build a pose like a cat. In this asana arms should be perpendicular and hands should be flat on ground. Then you have to raise your head back and push navel downwards followed by curling your head inward and press the middle of back upwards, rounding your spine upwards. When this asana is done regularly it gives good exercise to throat region and improves the functioning of thyroid gland.

Halasana (Plough pose)

The practitioner lies on the floor, lifts the legs, and then places them behind the head. After regular practice of Halasana you may achieve the final position by tucking chin to chest, placing hands on the floor, walking the feet towards the hands and bending at the elbows to lower shoulders to the floor. Halasana is excellent pose for Thyroid problems. The blood is blocked in the neck region and it oxygenates the thyroid gland which is extremely good for thyroid problems. It improves the function of the thyroid, parathyroid and pituitary glands. All of the other endocrine glands are regulated by these main glands and so the overall function of the endocrine system is improved. This results in the improved functioning of all the systems of the body.[8]

Bhujangasana (Cobra pose)

This asana resembles a serpent with its hood raised. For this asana lie on your stomach with your toes flat on the floor and forehead resting on the ground, keep your legs close together, with your feet and heels lightly touching each other. Place your hands (palms downwards) under your shoulders, keeping your elbows parallel and close to your torso. Taking a deep breath in, slowly lift your head, chest and abdomen while keeping your navel on the floor. Pull your torso back and off the floor with the support of your hands. In the final position your upper body will be fully stretched.[9] It helps to massage the thyroid gland and hence helps in curing the problem. The glands are stimulated by stretching in the front of the neck and this improves their functioning helping them work properly at their optimal levels.

Pranayama

Bhramari Pranayama

The original word in the term Bhramari is Bhramar (humming bee). The characteristic of this pranayama is to

create a sound like that of the humming bee while performing Pooraka or Rechaka.

Pooraka

To perform the Pooraka efficiently, first perform a gradual Rechaka and then start Pooraka. While inhaling air, the soft palate of the breathing tube in the throat area should be pressed a little so as to obstruct the air flow. Since this palate is soft and flexible, it starts vibrating and a peculiar sound is generated similar to the beautiful tone of the humming bee. When the Pooraka with a constant pace and the sound is complete, then Kumbhaka is performed.

Kumbhaka

When the Pooraka is completed, the nostrils are closed, all the three bandhas are fixed and Kumbhaka is performed. No sound is expected while being in Kumbhaka. All the three bandhas should be observed as described earlier.

Rechaka

After completion of Kumbhaka, the bandhas should be released and Rechaka should be started. The Rechaka, too should generate sound as that in Pooraka. However, the sound generated here is more in volume than that in Pooraka. This can be termed as Bhraamari Naad (sound of female humming bee). With continued practice, the sound will be more clear and pleasing to the ears. The units in Rechaka should be double that that in Pooraka.

Ujjayi Pranayama

Ujjayi is sometimes called "the ocean breath". Ujjayi is a diaphragmatic breath, which first fills the lower belly (activating the first and second chakras), rises to the lower rib cage (the third and fourth chakras), and finally moves into the upper chest and throat. Inhalation and exhalation are both done through the nose. The "ocean sound" is created by moving the glottis as air passes in and out. As the throat passage is narrowed it creates a "rushing" sound. The length and speed of the breath is controlled by the diaphragm. Due to humming and rusting sound, concentration of the mind is also facilitated. It has a positive effect on whole mind and body and particularly on nervous system. It improves the functioning of all endocrine glands by its soothing effect especially thyroid gland. It helps to secrete hormones from thyroid gland in required quantity.[10]

CONCLUSION

It can be concluded that yoga is valuable in helping the hypothyroid patients to manage their disease-related symptoms. Yoga may be considered as supportive or complementary therapy in conjunction with medical therapy for the treatment of hypothyroid disorder.

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