WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 14, 338-344. Review Article ISSN 2277– 7105

A REVIEW STUDY ON THE EFFECT OF SARVANGASANA ON HYPOTHYROIDISM

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Article Received on
22 May 2018,

Revised on 12 June 2018,
Accepted on 02 July 2018,

DOI: 10.20959/wjpr201814-12877

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ABSTRACT

Hypothyroidism refers to any state in which a person's thyroid hormone production is below normal. The symptoms include increased cholesterol levels, depression, fatigue, hair loss, memory loss, dry, rough skin and constipation. As the disease becomes more severe, there may be puffiness around the eyes, a slowing of the heart rate, a drop in body temperature, and heart failure. In its most profound form, severe hypothyroidism may lead to a life-threatening coma (myxedema coma). The thyroid itself is regulated by another gland that is located in the brain, called the pituitary. In turn, the pituitary is regulated in part by the thyroid (via a "feedback" effect of thyroid hormone on the pituitary gland) and by another gland called the hypothalamus. *Yoga* has a wholesome effect on both body and mind. *Asanas* or physical postures of the body act at various anatomical levels and help prevent or minimize the risk of various metabolic disorders. As in case of hypothyroidism *sarvangasana* when practiced regularly and in a proper way is the ideal *asana* for most thyroid gland problems. If a person is overactive it tends to reduce secretion and if underactive tends to release more thyroid hormones. The main reason being the blood circulation is mainly centered towards the thyroid gland and the brain.

KEYWORDS: Hypothyroidism, yoga, asana, sarvangasana.

INTRODUCTION

Hypothyroidism is a common condition with various causes but auto immune disease (Hashimoto's thyroiditis) and thyroid failure following I or surgical treatment of thyrotoxicosis account for over 90% of the cases except in areas where iodine deficiency is endemic. Women are affected approximately six times more frequently than men.[1]

Hypothyroidism is a hypometabolic clinical state resulting from inadequate production of thyroid hormones for prolonged periods or rarely from resistance of peripheral tissues to the effects of thyroid hormones.The clinical manifestations of hypothyroidism depending upon the age of onset of disorder are divided into 2 forms:[2]

- Cretinism or congenital hypothyroidism is the development of severe hypothyroidism during infancy and childhood.
- Myxodema is the adulthood hypothyroidism.

CRETINISM

A cretin is a child with severe hypothyroidism present at birth or developing within first two years of postnatal life.

Etiopathogenesis

The causes of congenital hypothyroidism are as follows:

- Developmental anomalies eg.thyroid agenesis and ectopic thyroid.
- Genetic defect in thyroid hormone synthesis eg.defect in iodine trapping, oxidation, iodination, coupling and thyroglobulin synthesis.
- Foetal exposure to iodides and anti thyroid drugs.
- Endemic cretinism in reigons with endemic goiter due to dietary lack of iodine.

MYXODEMA

The adult onset severe hypothyroidism causes myxodema. The term myxodema connotes non-pitting oedema due to accumulation of hydrophilic mucopolysaccharides in the ground substance of dermis and other tissues.

Etiopathogenesis

- Ablation of thyroid by surgery or radiation.
- Autoimmune(lymphocytic) thyroiditis(termed primary idiopathic myxodema) Endemic or sporadic goiter.
- Hypothalamic-pitutary lesions.
- Thyroid cancer.
- Prolonged administration of antithyroid drugs.
- Mild developmental anomalies and dyshormonogenesis.

Clinical Manifestations[3]

The majority of infants appear normal at birth, and 10% are diagnosed based on clinical features, which include prolonged jaundice, feeding problems, hypotonia, enlarged tongue, delayed bone maturation, and umbilical hernia. Importantly, permanent neurologic damage results if treatment is delayed. Typical features of adult hypothyroidism may also be present. Other congenital malformations, especially cardiac, are four times more common in congenital hypothyroidism.

Symptoms

- Tiredness, weakness
- Dry skin
- Feeling cold
- Hair loss
- Difficulty concentrating and poor memory
- Constipation
- Weight gain with poor appetite
- Dyspnea
- Hoarse voice
- Menorrhagia (later oligomenorrhea or amenorrhea)
- Paresthesia
- Impaired hearing

Signs

- Dry coarse skin;cool peripheral extremities
- Puffy face, hands, and feet (myxedema)
- Diffuse alopecia
- Bradycardia
- Peripheral edema
- Delayed tendon reflex relaxation
- Carpal tunnel syndrome
- Serous cavity effusions

Yoga is very ancient system that originated in India. The word '*Yoga*' is derived from *Sanskrit* root '*Yuj*' which means 'to join' or 'to yok'[4]. *Asana* is defined as the steady posture

comfortable for the practice of meditation.[5] *Asanas* are not only a form of physical exercise but also the method of gaining the perfect mental and physical relaxation. *Asana* is third step of *Ashtang yoga*. ***Sarvangasana*** or **shoulder stand** is a *yoga* pose wherein the whole body is balanced on the shoulders. It is also a part of the *Padma Sadhana yoga* sequence. '*Sarv'* means all, '*anga'* means part of a body, and 'asana' is posture. As the name indicates, *Sarvangasana* influences the functioning of all parts of your body. This asana is highly beneficial in maintaining the mental and physical health and is also referred as 'Queen of asanas'.[6]The effect of inversions on the intricate endocrine system, the body's glandular system of hormone delivery is perhaps the least understood.Shoulder stand is widely recommended for menopausal and perimenopausal women because it is assumed that it stimulates the thyroid and parathyroid glands, which secrete hormones that regulate one's metabolism. This has not been clinically proven,located in the upper chest, in a "general bath of blood," thus increasing their efficiency.In headstand, the pineal and pituitary glands (which sit behind the eyes in the center of the skull) are upended 180 degrees, directly over the fontanelle).[7]

MATERIALS AND METHODS

Steps of *sarvangasana*[8]

***Sarvangasana* (shoulder stand pose)**

1. Lie on the back on a folded blanket.Check that the head and spine are aligned and that thelegs are straight with the feet together.
2. Place the hands beside the body with the palms facing down.Relax the entire body and mind.
3. Contract the abdominal muscles and, with the support of the arms, slowly raise the legs to the vertical position,keeping them straight.
4. When the legs are vertical, press the arms and hands down
5. on the floor.Slowly and smoothly roll the buttocks and spine off the floor, raising the trunk to a vertical position.
6. Turn the palms of the hands upward, bend the elbows and place the hands behind the ribcage, slightly away from the spine, to support the back. The elbows should be about shoulder width apart.
7. Gently push the chest forward so that it presses firmlyagainst the chin.

8. In the final position, the legs are vertical, together and in a straight line with the trunk. The body is supported by the shoulders, nape of the neck and back of the head. The arms provide stability, the chest rests against the chin and the feet are relaxed.
9. Close the eyes. Relax the whole body in the final pose for as long as is comfortable.
10. To return to the starting position, bring the legs forward until the feet are above and behind the back of the head.Keep the legs straight.
11. Slowly release the position of the hands and place the arms on the floor beside the body with the palms down.
12. Gradually lower each vertebra to the floor, followed by the buttocks, so that the legs resume their initial vertical position.Lower the legs to the floor slowly, keeping the knees straight.
13. Perform this action without using the arms for support.
14. The whole movement should combine balance with control so that the body contacts the floor slowly and gently.
15. Relax in *shavasana* until the respiration and heartbeat return to normal.

Breathing

1. Inhale in the starting position.
2. Retain the breath inside while assuming the final pose.
3. Practise slow, deep abdominal breathing in the final pose.
4. Retain the breath inside while lowering the body to the floor.

Duration

When first practising, hold the final position for a few seconds only, gradually increasing the time over a period of weeks to an optimum of 3 to 5 minutes for general health. This practice should be performed only once during the asana program.

Sequence: This asana should be followed by *tadasana*.

Contra-indications

People with high blood pressure, heart conditions, inflammation of the ear, weak eye capillaries, severe near-sightedness, problems in the pituitary or thyroid glands, arteriosclerosis, cerebral or other thrombosis, severe asthma, tuberculosis, cold or sinusitis, excessively impure blood, slipped disc, weak spine or vertigo should not practise this asana.

Benefits

This asana helps in cases of low blood pressure. It balances the nervous system, strengthens the neck muscles and brings a rich supply of blood to the brain. As a preliminary pose to *sirshasana*, it accustoms the brain to the increased influx of blood and the crown to supporting the weight of the body.

DISCUSSION

The major function of thyroid gland is to maintain a high rate of metabolism which is done by means of iodine containing thyroid hormones thyroxine t_4 and tri-iodothyronine t_3.The synthesis and release of two main circulating thyroid hormones are regulated by hypophyseal thyroid stimulating hormone (TSH) and main step involved is iodine trapping by thyroidal cells and concentrating it more twenty folds. *Sarvangasana* is the most important pose to stimulate thyroid gland and control thyroxin. This is the most effective *yoga* pose where blood flow from legs to head region due to its inverted condition thereby helps in curing of thyroid.In *Sarvangasana* position, the blood circulation is especially centered towards the thyroid gland. The body position is upside down, so there is no difficulty for the heart to pump the blood towards the brain, since it automatically flows towards the brain. This position has beneficial effects on the two main parts of the body; these are the thyroid and parathyroid glands, and cervical vertebra. The thyroid and parathyroid glands have effects on functions of respiration, blood circulation, digestion, excretion, and nervous system. When these glands function properly, the other above-mentioned systems function normally. Therefore, this Asana is called, Sarvangasana, as it takes care of all these functions.

CONCLUSION

Sarvangasana has been considered as mother of all *asanas*. As mother protects and nourishes, the same way this asana protects and nourishes the whole body. There are various endocrine glands in the body that absorb substances from blood and secrete various hormones for proper functioning of body. One of such gland is thyroid gland and is main regulatory gland of body metabolism. The thyroid is one of the most labile organs in the body and responds to numerous stimuli such as puberty, pregnancy, physiologic stress and various pathologic states. Proper blood circulation to the gland and its regulatory centres (pituitary and hypothalamus) is maintained through this wonderful asana. As the head remains inverted in this asana the supply of blood is regulated by firm chin lock. Blood easily reaches the

thyroid and the head reigon. Thus, *sarvangasana* is the asana of utmost importance for preventing thyroid problems.

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