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Review Article

HYPOTHYROIDISM AND CONSTIPATION – A REVIEW

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ABSTRACT

Aim: To review on the effect of hypothyroidismon constipation.

Background: Hypothyroidism is a common disorder of the endocrine system in which it does not produce enough thyroid hormone. It can cause several symptoms such as tiredness, low tolerance to cold, depression, constipation, weight gain etc., of these the constipation is one of the important and a classic sign of hypothyroidism. During this disorder, the digestive system slows down, weakens the smooth contracting muscles lining the digestive tract to move the faeces very slowly, creating several complications like, dyspepsia, abdominal pain, heart burn etc.

Conclusion: Chronic constipation may lead to several other complications like haemorrhage, rectal prolapse, etc. Constipation due to hypothyroidism is not an easily recognisable trait. Hence, this review is done to have adequate knowledge about the effects of hypothyroidism on constipation.

INTRODUCTION

The endocrine system is the collection of several ductless glands that produce hormones, regulate metabolism, growth and development, tissue function, reproduction, sleep, mood, etc. Thyroid gland is an important endocrine gland among the other glands that controls the metabolism of body [1]. It is a small butterfly shaped gland located in front of the neck just below the thyroid cartilage (Adam's apple). The thyroid gland secretes thyroid hormones, which controls the metabolic rate and protein synthesis. The thyroid gland produces the hormones tetraiodothyronine (T_4) and triiodothyronine (T_3). Together these hormones regulate the cells to utilize its energy [2]. Low levels of thyroid hormone interfere with the body's ability to perform normal metabolic functions such as efficient use of energy from food products, regulation of many chemical reactions in the body and maintenance of healthy cells, bones and muscles.

The thyroid gland and its functionscan be affected by several diseases. Hyperthyroidism occurs when the gland produces excessive amounts of thyroid hormones. In contrast, hypothyroidism is a state of insufficient thyroid hormone production. Worldwide, the most common cause of hypothyroidism is iodine deficiency [3]. Hypothyroidism secondary to iodine deficiency remains the leading cause of preventable intellectual disability.

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Hypothyroidism

Hypothyroidism also called underactive thyroid or low thyroid is a common disorder of the endocrine system in which the thyroid gland does not produce sufficient thyroid hormone, the thyroxine. It can cause a number of symptoms, such as poor ability to tolerate cold, a feeling of tiredness, constipation, depression, and weight gain.

Thyroxine is a hormone made by the thyroid gland in the neck. It is carried around the body in the bloodstream. It helps to keep the body's metabolism working at the correct pace. Manycells and tissues in the body require thyroxine to keep functioning. Hypothyroidism may also occur if there is not enough thyroid gland left to make thyroxine as in the case of injury or after surgical resection.

Causes

Hypothyroidism is caused by (i) inadequate functioning of the gland which is classified as primary hypothyroidism, (ii) inadequate stimulation by thyroid-stimulating hormone (TSH) from the pituitary gland classified as secondary hypothyroidism (iii) inadequate release of thyrotropin-releasing hormone from the brain's hypothalamus classified as tertiary hypothyroidism [4]. Primary hypothyroidism is about a thousandfold more common than tertiary hypothyroidism [5]. Iodine deficiency is the most common cause of primary hypothyroidism and endemic goiter worldwide [4]. In areas of the world with sufficient dietary iodine, hypothyroidism is most commonly caused by Autoimmune disease called Hashimoto's thyroiditis (chronic autoimmune thyroiditis) [6]. Hashimoto's thyroiditis may be associated with a goiter. It is

characterized by infiltration of the thyroid gland with T-lymphocytes and autoantibodies against specific thyroid antigens such as thyroid peroxidase, thyroglobulin and the TSH receptor [4]. In women after pregnancy and child birth, about 5% of women develop postpartum thyroiditis which can occur up to nine months [7]. This is characterized by a short period of hyperthyroidism followed by a period of hypothyroidism of which 20-40% remains hypothyroid permanently [7].

Autoimmune thyroiditis is associated with other immune-mediated diseases such as diabetes mellitus type 1, pernicious anaemia, myasthenia gravis, rheumatoid arthritis and systemic lupus erythematosus (SLE).

Signs and Symptoms

Typical symptoms of hypothyroidism are abnormal weight gain, tiredness, constipation, heavy menstrual bleeding, hair loss, cold intolerance and a slow heart rate[X]. Occasionally there may be swelling of the front part of the neck due to goitre[1]. Many symptoms of having an underactive thyroid gland can be caused primarily by a low level of thyroxine. Basically, many body functions slow down and not all symptoms develop in all cases. Commonly occurring symptoms are tiredness, weight gain, constipation, aches, feeling cold, dry skin, fluid retention, mental slowing, lifeless hair, depression, etc. Less common symptomsinclude irregular or heavy menstrual periods in women, infertility, loss of sex drive, hoarse voice, carpal tunnel syndrome, memory loss or confusion to the elderly, etc. However, all these symptoms can be caused by other conditions and sometimes the diagnosis is not obvious. Symptoms usually develop slowly and gradually become worse over months or years as the level of thyroxine in the body gradually falls.

Constipation – A key symptom of hypothyroidism

Constipation refers to decreased bowel frequency, hard stools, a sense of incomplete evacuation or the associated symptoms of abdominal bloating and discomfort [8]. These symptoms may be part of a range of clinical syndromes that varyin their epidemiology, pathophysiology and response to different treatments. Among such conditions it is one of the best clinical manifestations and regarded as a key sign of hypothyroidism. Constipation is a symptom with many causes. These causes are of two types: obstructed defecation and colonic slow transit orhypomobility [9]. Since constipation is primarily a symptom and not a disease, effective treatment of constipation might require in determining the cause at first.

CONCLUSION

In most of the conditions, hypothyroidism is associated with symptoms of severe or chronic constipation. Such sign can be regarded as one of the major criteria to diagnose hypothyroidism [10]. The pathophysiology of hypothyroidism caneither directly or indirectly impair digestive functions and can prompt for altered gastrointestinal tract abnormalities like constipation, dyspepsia, weight gain with poor appetite, etc. Thus this critical review throws light upon the effect of hypothyroidism on constipation.

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