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An epidemiological perspective of thyroid disorder in India

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Abstract

Thyroid disorders are the commonest endocrine problems worldwide. According to various studies on thyroid disorder, it has been established that about 42 million people in India suffer from thyroid disorder. The etiopathogenesis of this disease is multifactorial. It depends on race, genetic makeup, dietary habits, lifestyle of individuals as well as environmental factors which keep changing from place to place and time to time. Hence the assessment of prevalence of diseases in each country forms an important aspect of scientific research. This epidemiological data is very essential to design preventive and curative strategies and also to decide priority fixation by policy makers in the health care sector in every nation.

Keywords: epidemiological, hypothyroidism, India, prevalence

Introduction

Thyroid disorders are the second most common endocrine problems seen among human beings all over the world, first being diabetes mellitus.

Thyroid diseases can be broadly classified as functional or structural or conditional or both.

According to various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases. (Kuchupillai et al. 2000)

The prevalence and pattern of disease vary from country to country and also shows temporal changes over centuries. The difference is mainly because of the fact that the etiopathogenesis of most of the diseases are multifactorial, which keep changing from place to place and time to time. The assessment of incidence and prevalence of diseases in each country is called epidemiology. Many of the developed nations have been considering periodic community health surveys of large representative samples of the general population which have provided valuable data on the prevalence pattern and changing trends of disease conditions. These data have also shed light into causal association between variables and diseases and thus provided considerable input to design preventive and curative strategies and also to decide on fund allocation and priority fixation by policy makers in the health care sectors in every nation.

Hence, to assess the spectrum and magnitude of thyroid disorders in this country, periodic nationwide epidemiological studies are needed.

This article will briefly review selected studies from an Indian context of thyroid diseases i.e., hypothyroidism, hyperthyroidism, iodine deficiency disorders and thyroid cancer.

Hypothyroidism: Deficiency of thyroid hormones produces a clinical condition called hypothyroidism. Depending on the time of occurrence of hormone deficiency clinical manifestations vary considerably. There are several forms of hypothyroidism, congenital hypothyroidism is common in India, the disease occurring in one out of 2640 neonates according to studies of Mumbai. Even in childhood, hypothyroidism can occur. Studies have shown 7970 hypothyroidism in children with thyroid disease (Descei 1947).

The prevalence rate of hypothyroidism was 3.9% among 971 adult subjects in population based studies conducted in Cochin.

A population based study was conducted on 971 subjects in Cochin, in which the prevalence rate of hypothyroidism was 3.9%. Subclinical hypothyroidism is the most common in adults and females. (Usha et al 2009) [3]

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In Marwaha *et al* study, the prevalence of hypothyroidism in school children was 7.3%.

Hyperthyroidism: When thyroid hormones are produced in excess it can produce florid symptoms such as weight loss, palpitation, metabolic abnormalities, etc.

In Pondicherry, a hospital based study was conducted in which subclinical O.G.I and over hyperthyroidism 1.2% were found in women subjects (Hbraham *et al.* 2009)

Subclinical 1.6% and over hyperthyroidism 1.3% were present in a community based survey was conducted in Cochin. Positive anti-TPO antibodies were found in more than a third of hyperthyroid defected cases (Usha *et al* 2009) ^[3]

Iodine Deficiency Disorders: Deficiency of Iodine generally produces hypofunction thyroid and goiter, such diseases are categorized as Iodine Deficiency Disorder.

Before the era of salt iodization in the Indian subcontinent especially in Himalayan belt areas, iodine deficiency diseases were widely prevalent. Studies of AIMS have shown that iodine deficiency can cause decompensatory effects on thyroid and high prevalence rate of cretinism in children and adults.

Based on the research findings, in 1997 the movement of India started to ban the use of non-iodized salt and promoted salt iodization.

India is undergoing a transition from iodine deficient to iodine sufficient state. Improvement in thyroid status and in community surveys conducted and promoted by the government of India. (Pandav *et al* 2013) ^[6]

Thyroid Cancer: Indian Council of Medical Research and National Cancer Registry Programs has collected the data between the period of 1984 to 1993 on 3,00,000 cancer patients in which 5614 subjects were diagnosed a thyroid cancer patients.(Rao 1999) ^[7].

The most common cancer type was Papillary Cancer rather than Follicular Cancer. The nation wide relative frequency of thyroid cancer was 0.11-0.21 among all the cancer. (Gangadharam *et al*, 1999) ^[8]

Conclusion: Thyroid dysfunction is one of the leading endocrine disorders in India as well as across the world. Thyroid hormone has Pervasive effects on growth and development in the fetus, child adolescent regulating metabolic rate throughout the life.

Unlike developed countries, there is a gross lacuna of national epidemiological data from India, especially non communicable diseases such as thyroid disorders, diabetes mellitus hyper function, etc. This is especially important in the case of diseases which have Florid symptoms such as thyroid and diabetes mellitus which was shown to be the commonest endocrine disorder, a periodic nationwide epidemiological studies needed as a cornerstone of management.

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