PREVALENCE OF THYROID AND PARATHYROID DISORDERS IN THE UNIFIED HEALTH SYSTEM

ABSTRACT

Objective: identifying thyroid and parathyroid disorders most prevalent in the Unified Health System. Method: a descriptive study with a quantitative approach initially performed in Ambulatory Records Occurrence of Sinop - Mato Grosso, and later in the charts. The sample was constituted by charts of people with thyroid and parathyroid diseases who underwent consultations financed by the Unified Health System, between February and July 2011, resulting in 115 records. The data were analyzed using descriptive statistics and organized in tables. The research project was approved by the Research Ethics Committee, Protocol 785/CEP-HUJM/10. Results: among the diagnoses, 100 represent hypothyroidism, 14 hyperthyroidism, and one hypoparathyroidism. Hyperthyroidism was most prevalent in women (85.7%) than in men (14.28%) and was not present in children. A child and seven adolescents had hypothyroidism. Conclusion: thyroid disorders are common chronic diseases of Sinop - Mato Grosso, and deserve attention because its dysfunctions affect the quality of life of the patients. Descriptors: Diseases of the thyroid gland; Prevalence; Nursing.

RESUMO

Objetivo: identificar distúrbios tireoidianos e paratireoidianos mais prevalentes no Sistema Único de Saúde. Método: estudo descritivo de abordagem quantitativa, realizado inicialmente nos Registros de Ocorrência Ambulatorial de Sinop-MT e, posteriormente, nos prontuários. Constituíram amostra, prontuários de pessoas com doenças tireoidianas e paratireoidianas que realizaram consultas custeadas pelo Sistema Único de Saúde, entre fevereiro e julho de 2011, resultando em 115 prontuários. Os dados foram analisados por estatística descritiva e organizados em tabelas. O projeto da pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, protocolo nº 785/CEP-HUJM/10. Resultados: dentre os diagnósticos encontrados, 100 representam hipotireoidismo, 14 hipertireoidismo e um hipoparatireoidismo. O hipertireoidismo foi mais prevalente nas mulheres (85,7%) do que nos homens (14,28%) e não foi presente em crianças. Uma criança e sete adolescentes apresentaram hipotireoidismo. Conclusão: distúrbios tireoidianos são doenças crônicas comuns em Sinop - MT e merecem atenção, pois suas disfunções afetam a qualidade de vida dos pacientes. Descriptores: Doenças da Glândula Tireóide; Prevalência; Enfermagem.

RESUMEN

Objetivo: identificar los trastornos de la tiroides y paratiroides más prevalentes en el Sistema Unificado de Salud. Método: un estudio descriptivo, con abordaje cuantitativo, realizado inicialmente en los Registros de la Ocurrencia Ambulatorial de Sinop - Mato Grosso, y más tarde en los prontuarios. La muestra fue constituída por personas con enfermedad de la tiroides y la paratiroides que se sometieron a consultas costeadas por el Sistema Unificado de Salud, entre febrero y julio de 2011, resultando en 115 registros. Los datos se analizaron mediante estadística descriptiva y fueron organizados en tablas. El proyecto de investigación fue aprobado por el Comité de Ética de la Investigación, Protocolo 785/CEP-HUJM/10. Resultados: entre los diagnósticos, 100 representan hipotiroidismo, 14 el hipertiroidismo y uno el hipoparatiroidismo. El hipertiroidismo es más frecuente en las mujeres (85,7%) que en los hombres (14,28%) y no estaba presente en los niños. Un niño y siete adolescentes tenían hipotiroidismo. Conclusión: los trastornos tiroideos son enfermedades crónicas comunes en Sinop - Mato Grosso y merecen atención porque sus disfunciones afectan a la calidad de vida de los pacientes. Descriptores: Enfermedades de la Glándula Tireoide; Prevalencia; Enfermería.

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INTRODUCTION

Over the last two centuries, with the processes of demographic and epidemiological transition, there was a remarkable change in the profile of morbidity and mortality of the world population, with prevalence of chronic noncommunicable diseases (NCDS). Among these diseases are cardiovascular diseases, cancer, endocrine and metabolic disorders and chronic respiratory diseases. Endocrine disorders are common and have a differential ability to affect the function of all organ systems of the body.

Developing countries have witnessed in recent decades, the same phenomenon. These changes have contributed to an increasing rise in health care spending, including significant social costs as early disability, requiring approaches that respond effectively to these problems. With an aging population, control of infectious diseases, increased life expectancy, some lifestyle habits and consumption and exposure to environmental pollutants, chronic non-communicable diseases became true epidemics today.

According to the Distribution of the Hospital Morbidity in SUS by Cause Groups, the number of inhabitants affected by some endocrine, nutritional or metabolic disease in Brazil is 283.671 (2,51%); being, among these, 29.103 (3,17%) in the Midwest region, and of these, 4.013 (2,19%) in the state of Mato Grosso.

The multiple hormonal systems of the body play key roles in the regulation of almost all functions, including metabolism, growth and development, hydroelectrolyte balance, reproduction and behavior. Without growth hormone, the individual becomes a dwarf. In the absence of thyroxin and triiodothyronine from the thyroid gland, almost all chemical reactions in the body become slow, and the individual also becomes apathetic.

The thyroid receives stimulation of thyroid-stimulating hormone (TSH), for the production of the hormones T3 (triiodothyronine) and T4 (thyroxin), which have an effect on the metabolism of the body. Calcitonin is also secreted by the thyroid, and is responsible for the decrease in serum calcium. Decrease or increase in the production of thyroid hormones can cause hypothyroidism or hyperthyroidism, respectively.

Parathyroid hormone (PTH), produced in the parathyroid gland, is the hormone responsible for the control of serum calcium and phosphate by regulating the intestinal absorption, renal excretion and bone resorption. Increase in the production of this hormone, as occurs in hyperparathyroidism, causes rapid resorption of calcium from the bones causing hypercalcemia, whereas decreased, hypoparathyroidism, hypocalcemia generates.

In this context, we understand the importance of the human endocrine system and the consequent impact on health related disorders. However, apparently, little has been done in the Brazilian public health for the early detection and treatment of these diseases. It is observe a lack of programs and actions for this theme and little preparation and commitment of health professionals involved.

The nurse is in a privileged position to act in this situation, as discussed have direct contact with the population and perform queries based on principles of completeness and holism.

It is noteworthy, also, shortages facing the problem of endocrine disorders, especially in the area of nursing scientific research. Statistics of endocrine disorders in particular, are not obtained with the desired success, as commonly studies add endocrine nutritional and metabolic diseases; it is not possible to acquire specific information of interest disorder.

Thus, it is understood that there is a need for further investigations on the subject, and that researchers and nurses are dedicated to making the diagnosis of situational populations to guide action planning. Given the problems discussed and the absence of organized epidemiological data on endocrine disorders in the Municipality of Sinop, we chose to carry out related research in order to identify the most prevalent thyroid and parathyroid disorders in the Unified Health System (SUS).

METHOD

This is a descriptive study with a quantitative approach, initially performed through identification of thyroid and parathyroid disorders most prevalent in the Unified Health System of Sinop - MT, between February and July 2010, presented to the College of Nursing of the Federal University of Mato Grosso. Sinop-MT, Brazil. 2010.

This is a descriptive study with a quantitative approach, initially performed through identification of thyroid and parathyroid disorders most prevalent in the Unified Health System of Sinop - MT, between February and July 2010.
part of the research was conducted in the Department of Health of the city of Sinop and part in the PAM. 

Constituted a sample the medical records of people with thyroid and parathyroid diseases to hold consultations in the city of Sinop, financed by the SUS, between February and July 2011, and which were found in the archives of PAM, resulting in 115 records. This included records of people in any age group and gender, and not records of people who have other pathology were excluded parallel.

The data collection was conducted from April to July 2011, guided by a questionnaire in order to obtain information such as: identification data and patient demographics, classification of the disorder and its treatment. However, we obtained a great difficulty in collecting information due to lack of data from medical records, plus the difficulty in understanding the Calligraphy of the endocrinologist. Another obstacle encountered was the lack of standardization in the classification of causes of thyroid disorders patients, in addition, most of the records even showed pathological etiology. 

The data were analyzed using descriptive statistics and organized with the help of tables. The study was developed after being reviewed and resolved by the Ethics Research Committee with Humans (protocol N° 785/CEP-HUJM/10). It is noteworthy that the study followed all ethical guidelines described in Resolution 196/96 determined by the Ministry of Health.

The results show that among the diagnoses found in the sample, 100 represent hypothyroidism, 14, hyperthyroidism, and only one hypoparathyroidism. It is noteworthy that the limitations of research using secondary data should be considered when reading this research, highlighting the underreporting of hospital records.

In the literature, there are references that hyperthyroidism is the second most prevalent endocrine disorder, second only to diabetes mellitus. However, this study demonstrated a higher prevalence of hypothyroidism, whereas only 12.28% of thyroid disorders were surveyed type of hyperthyroidism. However, nine records indicating hypothyroidism were due to a thyroidectomy performed for the treatment of hyperthyroidism.

The prevalence and profile of thyroid disorders depend on ethnic and geographic factors, and, especially, the pattern of consumption of iodine.

In a research conducted in the Brazilian Northeast, hypothyroidism was more prevalent, and demographic data found in hyperthyroidism were similar to those found in this study, being women (85.7%) aged between 24 and 59 years old (57.14%) most affected.

Hyperthyroidism was more prevalent in women (85.7%) than in men (14.28%). Regarding the age, there were no children with hyperthyroidism, as seen in Table 1.

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescents (10-19 years old)</td>
<td>2</td>
<td>14.28%</td>
</tr>
<tr>
<td>Young adults (20-23)</td>
<td>2</td>
<td>14.28%</td>
</tr>
<tr>
<td>Adults (24-59)</td>
<td>8</td>
<td>57.14%</td>
</tr>
<tr>
<td>Elderly (60 or older)</td>
<td>2</td>
<td>14.28%</td>
</tr>
</tbody>
</table>

The body weight appeared heavier than or equal to 65 kg in eight patients (57.14%), and less than 65 kg in six patients (42.85%).

Of the 14 patients diagnosed with hyperthyroidism in two records there was no record of the etiology and the rest found itself distributed as follows: two (14.28%) were due to subacute thyroiditis, two (14.28%) of multinodular goiter, one (7.14%) of Nodular Goiter, one (7.14%) of Graves' disease, one (7.14%) of Thyroid nodule, one (7.14%) of Toxic Goiter, one (7.14%) of Goiter Giant, one (7.14%) of Pituitary Adenoma and one (7.14%) of Thyrotoxicosis.

In one promptuary there were no records of the exams, while in the other 13 records, 36 exams were ordered, being the most used HRT (33.3%), free T4 (27.7%) and ultrasound of the neck (22.2%). Serum HRT is the best test of thyroid function due to its high sensitivity and, as a result, was asked to take over monitoring and diagnosis of thyroid disorders. Despite the level of T3 being the most accurate indicator of hyperthyroidism, as stated in the literature; in this study, it was requested in only one medical record of a patient with hyperthyroidism.

Patients with HRT outside the reference range and levels of T4 and T3 within the normal range are common in clinical practice. Mild or subclinical thyroid disease is present mainly in middle-aged and among the elderly. However, there is a controversy surrounding the importance in the clinical
setting and the need for diagnosis and treatment of subclinical thyroid disease.\textsuperscript{7}

For treatment of hyperthyroidism, the antithyroids are very used, because it reduces the production of thyroid hormone; while beta-blockers are used to alleviate the symptoms without altering the production of hormones. In the survey, the most frequently prescribed medication was propranolol (beta-blocker) and Tapazol\textsuperscript{8} (antithyroidian).

As a definitive treatment, it is shown thyroidectomy and radiiodine.\textsuperscript{8} According to the records, two patients with hyperthyroidism with radiiodine treatment are, and another patient already made and today has consequently hypothyroidism. Nine patients underwent thyroidectomy and currently treat hypothyroidism.

Some patients with Graves’ disease or toxic multinodular goiter are undergoing thyroidectomy or radioactive iodine therapy to reverse the hyperthyroidism, and eventually develop hypothyroidism. In this research, it was found ten patients who fit into this framework. Hypothyroidism appeared in 87.72% of records that pointed thyroid disorders. It is observed below the age of these 100 patients with hypothyroidism in Table 2.

One child and seven adolescents had hypothyroidism, being a considerable number in a relatively small sample, which reinforces the importance of neonatal screening. The need for early diagnosis to prevent brain damage makes congenital hypothyroidism the most important type of hypothyroidism among varieties. The National Newborn Screening Program, developed by the Ministry of Health in partnership with the Departments of Health, the Federal District and the municipalities, performs the detection of congenital hypothyroidism by HRT serum on filter paper (neonatal screening).\textsuperscript{9} In India this disease occurs in approximately 1 per 2640 newborns, compared to a world average of 1 in 3800.\textsuperscript{10} In Brazil, it is reported incidence of approximately 1 case per 2.500 live births.\textsuperscript{11}

In childhood and adolescence, commonly hypothyroidism is caused to thyroid dygenesis, and thyroiditis dyshormonogenesis.\textsuperscript{10} Although there is no record high in the charts so you could check the BMI (Body Mass Index) of patients and identify overweight among 100 records of patients diagnosed with hypothyroidism, there was a record of body weight in 95, being 62 (65,2%) patients had greater than or equal to 65 kg and 33 (34,7%) had lower weight 65kg.

The cause of inadequate secretion of thyroid hormone was reported in only 31 records, two (2%) caused by Thyroid nodule, five (5%) by multinodular goiter, five (5%) by Hashimoto, one (1%) by treatment with radiotherapy due to Graves’ disease, nine (9%) of thyroidectomy because the hyperthyroidism previous four (4%) by diffuse goiter, one (1%) by Pituitary Adenoma, two (2%) by thyroiditis a (1%) per hypopituitarism and one (1%) for bilobar Colloid Cyst. It is noteworthy that in 69 (69%) records did not contain records of the etiology of the disorder. The record of the etiology was included in this study has found in the records, ie, the same way it was recorded by an endocrinologist.

Thyroiditis may manifest as hypothyroidism or hyperthyroidism, so the same was repeated in the etiology of both disorders research. The thyroid nodules are usually not able to capture iodine and produce thyroid hormone. The FNA (Fine Needle Aspiration) is crucial to detect if the lump is malignant. It is noteworthy that there was a record of the request that examination in the medical records of two patients suffering from thyroid nodule.

The most requested additional tests for monitoring or diagnosis of hypothyroidism was HRT (44,6%), free T4 (29,1%) and ultrasound of the neck (17,4%) of the 206 requested and recorded in the promptuaries. The least used were: x-ray, ultrasound, Doppler and scintigraphy. In five records there were no records of examinations.

The tests for antithyroid antibodies by immunoassay are identified as positive in 100% of cases of thyroiditis Hashimoto\textsuperscript{5}, and in this study, were asked in the five patients with such disease. The medication most

| Table 2. Number of patients with hypothyroidism served in the SUS of Sinop/MT; per age group, 2011. |
| Age | n | % |
| Children (0-9 years old) | 1 | 1% |
| Adolescents (10-19) | 7 | 7% |
| Young adults (20-23) | 3 | 3% |
| Adults (24-59) | 77 | 77% |
| Elderly (60 or older) | 12 | 12% |
commonly used to treat hypothyroidism is levothyroxine, and three commercial names for it: Puran T4®, Euthyrox® and Synthroid®. Of the 100 patients with hypothyroidism, 66 deal with Puran T4®, two with Euthyrox®, two with Synthroid® and two radiiodine treatment. In 24 promptuaries there was no record of treatment.

In this sample, only one chart showed parathyroid disorder, and hypoparathyroidism. The patient is female, is 53 years old and makes treatment with Puran T4® and Calcium. According to the Ministry of Health, there are no Brazilian epidemiological data on the incidence or prevalence of this disease.¹

The extent of surgical resection of the thyroid is a risk factor for the emergence of clinical and laboratory hypoparathyroidism, while the age group above 50 years old is a factor for the emergence of clinical hypoparathyroidism.¹³

Ultrasoundography is a highly sensitive technique and should be used as a first step for the preoperative localization of parathyroid and thyroid lesions. Ultrasonography also serves for the indication for puncture biopsy indication with fine needle.¹⁴ Ultrasound (or sonography) Neck ranked third among the most requested tests in this study, being always associated with other tests.

Although rare, as stated in the literature¹², the pituitary adenoma appeared registered in two records, but one of them had hypothyroidism due to conduct two excisions of the tumor, according to the records.

**CONCLUSION**

The thyroid is one of the most important glands of the human body, is responsible for controlling various body functions. As a result, deserves special attention because if left untreated, its dysfunctions greatly affect the quality of life of patients.

It could be observed that the research presented consistent data with the literature ones, mainly reaffirming the age in which these diseases are prevalent in older adults, and gender most affected by the disorders described by checking the predominance in females. However, it is important to highlight the considerable difficulty in data collection due to underreporting in the medical records of Sinop-MT, and the difficulty in understanding this calligraphy, especially when referring to the treatment of the patient.

Despite the short time in which the survey was conducted, there was a relatively large sample, proving the high incidence of thyroid disorders in the population of Sinop-MT. It is considered that to avoid the pathologies mentioned it is necessary intake of foods rich in iodine and periodic consultations in primary care. To both improve the knowledge of nurses and other health professionals on the subject is needed.

The nurse is in a privileged position in primary care and can provide early detection of signs and symptoms of the diseases discussed by conducting an effective physical examination during the consultation of Nursing. Therefore, the development of this study, among other contributions, provides awareness greater attention to be given to thyroid and parathyroid dysfunction in Primary Care, diagnosing them earlier, contributing to greater success in treating and preventing possible complications. With this study, we hope to encourage nurses to increasingly gain their independence through knowledge and quality care.

It is hoped, still, that the results obtained are used and serve as an incentive for new studies in the area.

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Prevalence of thyroid and parathyroid...


Submission: 2012/10/07
Accepted: 2014/01/14
Publishing: 2014/06/01

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