



CLINICAL CHARACTERISTICS OF PATIENTS WITH TRICHOPHYTHIA

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Article history:	Abstract:
Received: February 1 st 2023 Accepted: March 1 st 2023 Published: April 6 th 2023	Trichophytosis is a widespread disease from the group of dermatomycosis. However, the incidence rate in different regions of the world is different, which is associated with natural and geographical features, social and economic priorities, the traditional way of life and insufficient sanitary and epidemiological population. Changes in ecology, urbanization and associated changes in the boundaries of nosoareals lead to changes in the epidemiology and nature of the clinical course of dermatomycosis. The incidence of dermatophytosis fluctuates in different time periods and qualitative main stages in the development of public health, with the use of sanitary and preventive work, perspectives.

Keywords: trichophytosis, forms of trichophytosis, subclinical hypothyroidism.

OBJECTIVE: To study the features of the clinical characteristics of patients with trichophytosis.

MATERIALS AND METHODS:

Clinical observations were carried out in the Tashkent Regional Dermatovenerologic Dispensary. An important condition for the selection of patients for subsequent inclusion in the survey group was to identify the frequency of occurrence of patients with SH in patients with TF, and then to trace the features of the symptoms and clinical course of the underlying disease. We examined 150 patients. Of these, on the basis of a thorough analysis, anamnesis and repeated control determination in the blood of thyroid hormones TSH, Ts and T.}, consultations of an endocrinologist, ultrasound examination of the thyroid gland, the diagnosis of SH was confirmed in 90 patients.

In all patients, during the clinical and mycological examination, a diagnosis of zoonanthropotic trichophytosis with different stages of clinical manifestations was established. Microscopic examination of scrapings from the surface of lesions and in vellus hair in 73% of patients revealed tr. ectotrix, in 27% of patients the diagnosis was established clinically. When conducting cultural studies in 65% of patients were sown Tr. verrucosum (faviform).

Clinical manifestations of trichophytosis were assessed in accordance with the generally accepted classification (Skripkin Yu.K., 1995). Depending on the severity of inflammatory phenomena, superficially spotty, infiltrative and infiltrative-suppurative forms of trichophytosis with localization on smooth skin and scalp were distinguished.

It has been established that infection of patients with TF in epidemiological studies occurred through their contact with sick animals, namely with cattle in 98 (65.3%) patients, 37 (24.7%) patients with TF associate their disease with contact with sick relatives, and the remaining 15 (10.0%) patients with TF do not associate their disease with anything.

Most patients with TF were admitted to the clinic in summer - 53 (35.3%) and autumn - 65 (43.3%) patients periods of the year. The remaining 32 (21.3%) patients with TF were admitted in winter - 20 (13.3%) and in spring - 12 (8.0%) patients.

All patients were diagnosed with TF on the basis of anamnesis, clinical, microscopic, microbiological studies.

Skin pathological foci with superficially spotted trichophytosis of smooth skin were characterized by lesions of various sizes, round or oval, mainly in open areas skin: neck, forearms, upper and lower extremities. On the periphery the foci were surrounded



by a continuous roller of small papular and vesicular elements.

The disease was characterized at first by single, later (after 3-6 days) by multiple foci of 1-2 cm, with irregular outlines and indistinct borders. The foci were localized in isolation, without a tendency to merge. The skin in the foci was slightly edematous and hyperemic, covered with pityriasis scales of a grayish-white color, the layering of which gave the lesion a whitish appearance. There were cases when hyperemia and puffiness increased, vesicles, pustules, crusts joined, especially in peripheral areas. The size of pathological elements reached 2-3 cm in diameter. In pathological foci, the affected hair lost its color, luster, elasticity, often strayed and twisted. Their thinning was noted due to breaking off at the level of 2-3 mm from the skin surface.

Superficial trichophytosis of the scalp (in 3 patients) was characterized by the presence of foci of various sizes (from 1 to 3 cm) of a round-oval shape. All patients had multiple foci. Borders foci were indistinct. In the lesions, there was slightly pronounced edematous infiltrate, the presence of a slight grayish-white peeling on the surface of the foci. Also in the lesions hair thinning was observed, some of them were broken off at a height 1-2 mm from the level of the skin. 2 patients complained of mild itching in the affected area.

In patients with infiltrative form of TF, the pathological focus was localized on the scalp - in 2 (10.0%) cases, on the head and smooth skin - in 2 (10.0%), on the trunk - in 7 (35.0%) , on the forearms and legs - in 9 (45.0%) patients. The course of the disease was characterized by the presence of infiltrated, slightly elevated hyperemic foci above the level of the skin. The edges of the foci are raised in a roller-like manner above the level skin. On the surface of the foci, grayish-white scales, vesicles, papules, and serous crusts are observed. The defeat of regional lymph nodes (behind the ear, cervical) was observed in 3 out of 20 patients. All patients complained of slight itching in the affected area. With an infiltrative form of trichophytosis of the scalp in 2 (10.0%) of patients, the focus was single. The lesions were significantly infiltrated, on their surface there were multiple papules, single pustules, serous crusts. Hair in the foci is broken off at a height of 1-2mm from skin level. An increase in regional lymph nodes and their pain was noted in 3 patients. Subjectively, patients noted itching and slight soreness in the lesions. With the development of infiltrative-suppurative trichophytosis of smooth skin in 2 (10.0%)

patients, the disease began with the appearance of one pale pink spot with rounded outlines and clear boundaries. The surface of the elements was covered with scales. The peripheral roller consisted of follicular papules, small vesicles, shriveled into crusts. Over time, the foci increased in size due to peripheral growth, the symptoms of inflammation increased, and due to increasing infiltration, the foci rose above the level of healthy skin. The size of the skin pathological process varied from 3-5 cm to 7-8 cm in diameter.

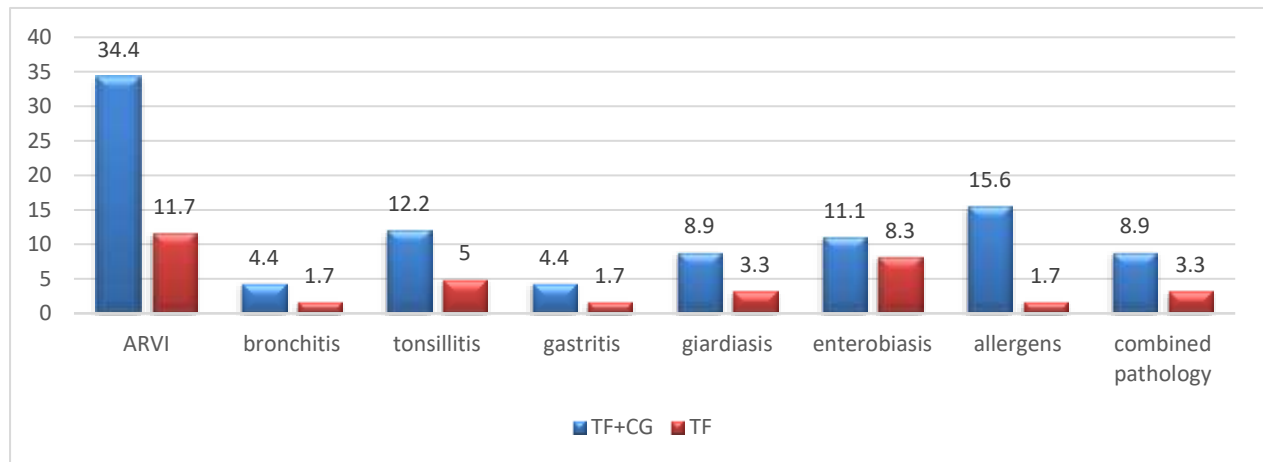
In 14 (70.0%) patients, single lesions were observed, in 6 (30.0%) - multiple. Subjectively, itching was noted in 9 (55.0%) patients. At 6 (30.0%) patients had an increase in regional lymph nodes, their soreness. In 11 (55.0%) patients, the foci were localized as scalp and smooth skin.

With infiltrative-suppurative trichophytosis of the scalp, 7 (35.0%) patients have a large lesion, sharply defined, hyperemic, significantly infiltrated, tuberos hemispherical shape. The bumpy surface of the focus is covered with numerous folliculitis, erosion, and sometimes ulceration. Hair partially falls out, becomes brittle and is easily removed. This form of trichophytosis is characterized by sharply expanded mouths of hair follicles filled with pus, released with light pressure in the form of copious drops (a symptom of "honeycombs") Celsus.

Dense at first the consistency of the lymph nodes becomes time testovato-soft. Palpation of the lesion was accompanied by significant soreness, as patients noted a burning sensation and tingling in the lesion.

In accordance with the objectives of the study, a comparative analysis of the clinical manifestations of trichophytosis and the general condition of patients with the usual course of mycosis and its combination with subclinical hypothyroidism. During external examination of patients with HS, a distinctive feature from those patients with TF, but without HS, was a pronounced dryness of the skin, irritability, constipation, tachycardia, muscle weakness, a high frequency of concomitant chronic somatic pathology, including acute respiratory viral infections (ARVI) were also observed – on 22.8%, bronchitis - by 2.7%, tonsillitis - by 7.2%, organ diseases

Gastrointestinal tract, namely gastritis - by 2.7%, enterobiasis - by 2.8%, giardiasis - by 5.5%, allergic diseases by 13.8%, combined pathology - by 5%, that is pathologies that are more associated with disorders of the immune system (pic. 1).



Pic. 1. The frequency of detection of comorbidity in the comparison groups in patients with TF+SH and TF (% of the number of patients in the group).

The high frequency of allergic and respiratory diseases can reduce the resistance and reactivity of the organism of the examined patients and increase the risk of developing infectious diseases.

It should be noted that according to WHO data (2005), to make a diagnosis of FH, it is sufficient to determine the level of TSH in the blood, which should be elevated > 5 mU / l and T4 and Tz, which should be within the upper limits of the physiological norm are 1 nmol/l and 23.5 nmol/l [39, 40, 66]. In addition, there should be no visible increase in the volume of the thyroid gland, as well as violations in its structure and size, determined by ultrasound. A feature of the course of TF combined with SG is that these patients are more likely to experience desquamation on an erythematous background and lesions, both on the scalp and smooth skin. So, in the superficially spotted form of TF, the focus tends to merge, reaching sizes up to 5-7 cm in diameter, while in patients with TF without SH – from 0.3-1 and up to a maximum of 3 cm, with clear boundaries. It is important to emphasize that when superficial TF without SG, the focus was localized on the face of 1 (5.0%) patient, head and smooth skin - in 4 (25.0%), on the forearm - in 1 (5.0%), trunk - in 11 (55.0%), scalp in 2 (10.0%) cases.

Whereas in patients with TF against the background of SH - in 2 (6.7%) patients they occurred on the scalp, in 6 (20.0%) - on the scalp and smooth skin, 6 (20.0%) - on the forearm, torso and face in 8 (26.7%) patients.

In contrast to conventional TF, in patients with TF combined with HS, the disease began with the appearance of several edematous, slightly protruding above the level of healthy skin spots of pink-red color, irregular shape, but with sharp boundaries. Their surface was covered with scales and small bubbles, which quickly dried up into crusts. Over time, inflammation in the central areas regressed and the lesion took the form of a ring. Almost all patients with SH had itching, while in patients without SH, itching was either absent - in 16 (80.0%), or was mildly pronounced - in 4 (20.0%). With an infiltrative form of TF combined with SG on the head in 3 (10.0%), head + smooth skin - in 5 (16.7%), face - in 5 (16.7%), forearm and lower legs - in 16 (53.3%) and on the trunk - in 1 (3.3%) patients. These patients showed more signs of intoxication, such as fever - in 10 (33.3%) patients, weakness - in 15 (30%), loss of appetite - in 7 (23.3%), irritability - in 7 (23.3%). In the group of patients with SH, all patients had severe itching. On the surface of the foci there are multiple pustules, papules, serous crusts. On examination, the foci were bright red with severe infiltration. Regional lymph nodes were enlarged - cervical - in 5 (16.7%) patients, axillary - in 5 (16.7%). This group of patients had 25% more severe itching and 33.3% more frequency of increased subfebrile body temperature.

Table 2. Symptoms of the disease in patients with infiltrative-suppurative form of trichophytosis.

Symptoms of the disease	TF+SH (n=30)		TF (n=20)		%
Vellus hair is involved in the process	30	100,0	16	80,0	20,0
Presence of ulceration (localization):					
- head	23	76,7	7	35,0	+41,7
- head and ch. leather	2	6,7	11	55,0	-48,3
-face	1	3,3	1	5,0	-1,7



- forearm and lower leg	1	3,3	1	5,0	-1,7
- torso	3	10,0	0	0,0	+ 10,0
T - reaction	27	90,0	4	20,0	+70,0
Enlargement of regional lymph nodes:					
- cervical	19	63,3	2	10,0	+53,3
- axillary	11	36,7	4	20,0	+16,7
Headache	27	90,0	2	10,0	+80,0
Weakness	27	90,0	3	15,0	+75,0
Loss of appetite	27	90,0	2	10,0	+80,0
Irritability	12	40,0	3	15,0	+25,0
Itching:	0	0,0	0	0,0	0,0
- absent	0	0,0	9	45,0	-45,0
- mild	12	40,0	4	20,0	+20,0
- pronounced	18	60,0	7	35,0	+25,0

In the infiltrative-suppurative form of TF combined with SH (Table 2), the pathological process began with the appearance of several scaly round-oval spots with clear boundaries, which increased along the periphery and, merging with each other, formed bizarre figures. Single lesions were observed in 13 (43.3%) patients, 18 (60%) had multiple lesions. Subjectively, itching was noted in 100.0% of patients. In patients with TF against the background of SH, vellus hair was involved in the pathological process. In 19 (63.3%) patients, painful enlarged cervical lymph nodes were noted, and in 11 (36.7%) - axillary ones. Signs of intoxication - elevated body temperature - in 27 (90.0%) patients, headache, weakness, loss of appetite - in 90.0% of patients, irritability - in 12 (40.0%) patients. In these patients, vellus hair is involved in the pathological process by 20.0% more, ulcerations are more marked by 41.7%, the frequency of cases of enlargement of the cervical and 16.7% of the axillary lymph nodes is noted by 53.3% more, by 70% there is more temperature reaction, weakness - by 75%, loss of appetite - by 80%, headaches - by 80%, irritability - by 25.0% more than in patients with TF without SH. The conducted studies have shown that in patients with TF associated with SH, the course of the disease is characterized by more pronounced disorders of the skin and scalp lesions, as well as signs of intoxication of the body. It can be assumed that the distinctive features of the clinical course and symptoms of the disease in patients with TF against the background of SH are due to more pronounced immunological changes that determine the resistance and reactivity of the body. Thus, the clinical course of various forms of zoonotic trichophytosis in children, occurring against the background of HS, differs in a number of features, which makes it possible to distinguish two clinical variants (usual and combined with HS) and necessitates in-depth scientific research and therapeutic correction. Clinical examination of patients with trichophytosis included anamnesis, including epidemiological analysis, clinical examination,

laboratory biochemical studies. The basal level of free fractions of thyroid hormones - thyroxine (T4), triiodothyronine and pituitary thyroid stimulating hormone (TSH) was determined by enzyme immunoassay on an Immunochem enzyme immunoassay analyzer (Czech Republic). The structure of the study included an assessment of the immune status. In this case, a set of monoclonal systems produced by the Institute of Immunology of the Ministry of Health and Medical Industry of the Russian Federation was used: MABs of the LT series directed to SDZ+ cells - the total (pan) subpopulation of T-lymphocytes, to SD4+ cells - subpopulations of T-helper-inducers to CD8+ cells - T - suppressor-cytotoxic cells, as well as to CD16 + cells - natural killer cells (NKC) and to CD72 + antigen - a marker of B-lymphocytes. Immunological studies were carried out at Tibdiagnostics LLC at the Institute of Immunology of the Academy of Sciences of the Republic of Uzbekistan, under the guidance of MD. M. V. Zalyalieva.

The degree of endotoxemia was assessed by changes in blood levels SSE, MSM, which were determined by known methods, according to A. A. Togaibaev et al. [147] and N. I. Gabrielyan, V. I. Lipatova [37]. At the same time, the LII was calculated using the Ya. Ya. Kalf-Kalif formula [69], as well as the content of the CIC. To determine the level of CEC in the blood serum, the test system of the Tashkent small enterprise "Nihol" was used. The method is based on nephelometry of different solubility of immunoglobulin monomers in the composition of immune complexes in the presence of polyethylene glycol (PEG)-6000 in the medium). The content of blood cells was determined in the Goryaev chamber. At the same time, indicators characterizing the state of LPO-AOS processes on the surface of the affected skin were studied. For this, a specially marked damaged skin area 3–4 cm in size was selected and, before treatment with antifungal agents, it was irrigated with sterile distilled water in an amount of 5 ml three times (i.e., the surface of the damaged skin was



irrigated three times with a syringe using the same wash sample).

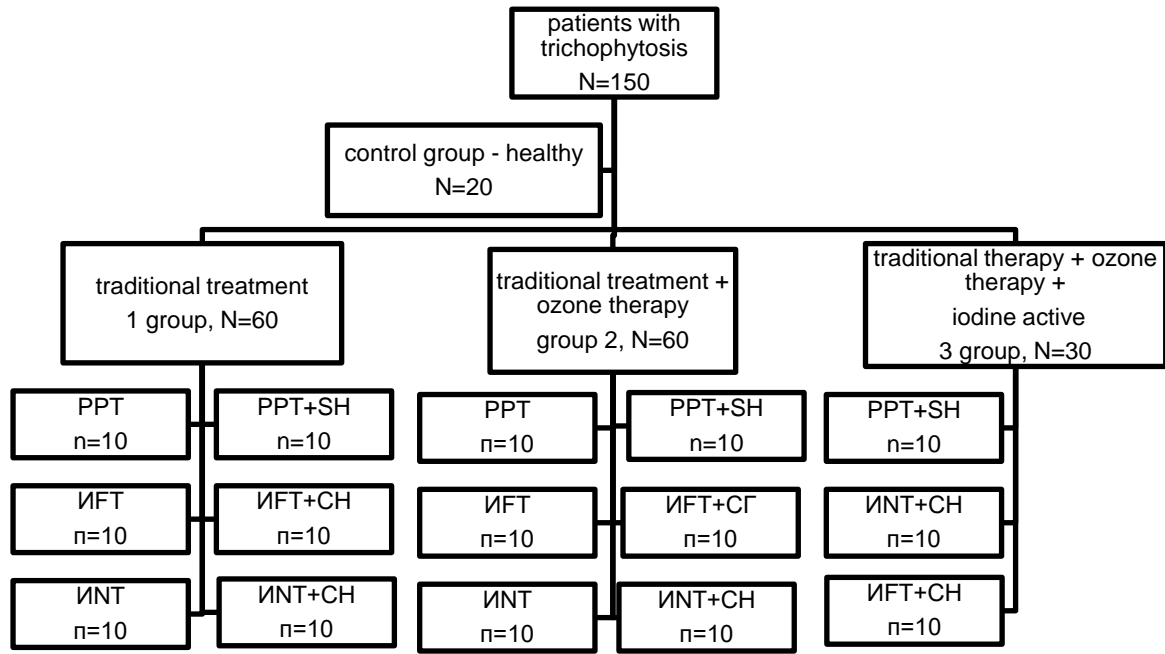
The production of oxygen radicals was determined by the method of spontaneous chemiluminescence on the device KhLM1Ts-01 (Russia) according to the method of Yu. A. Vladimirov and A. I. Archakov [34]. The rate of O_2^- generation was studied by the method of A. M. Gerasimov et al. [137] was determined by the amount of reduced cytochrome C inhibited by superoxide dismutase during incubation (37°C, 30 min) of washing liquid (1.0 ml) with incubation medium (3.0 ml) containing 10 mM sodium phosphate buffer (pH 7, 38), 5.5 mM glucose, 138 mM sodium chloride, 0.6 mM CaCl₂, 100 μM cytochrome C.

The activity of NADPH oxidase was assessed by the method of V. N. Rybnikov and et al. The level of NO was determined by the sum of metabolites of nitrites and nitrates (NO₂ and NO₃) according to the method of P.P. Golikov et al. [113]. The activity of nitrate reductase (HP) was determined by the method of T. P. Vavilova and Yu. A. Petrovich.

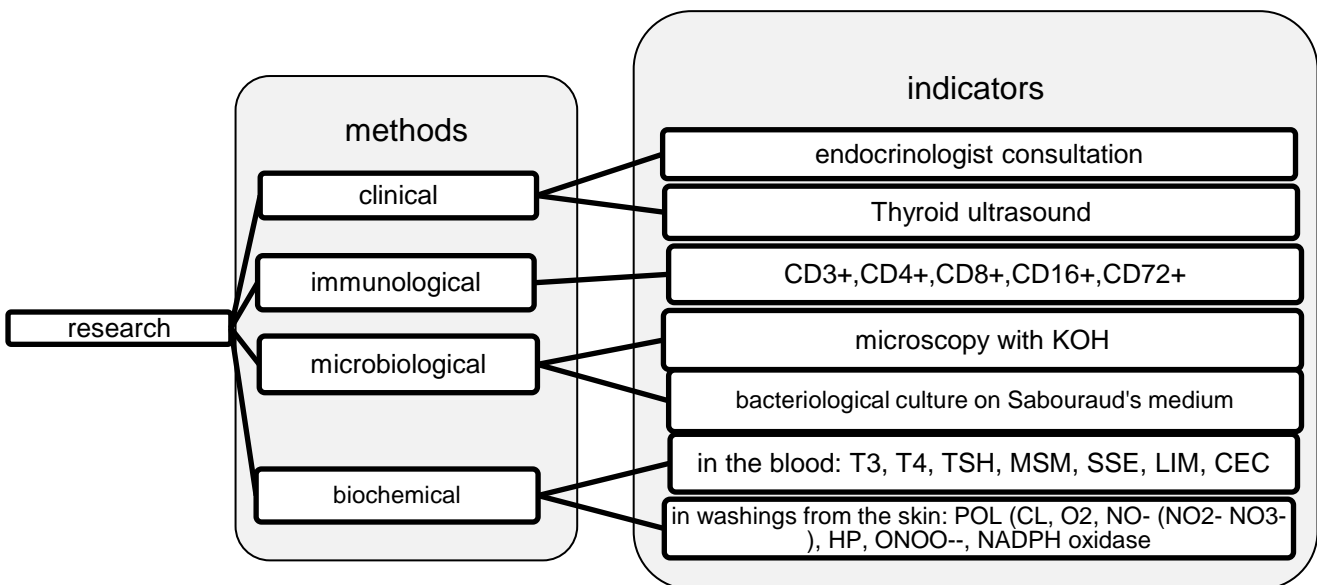
SOD activity was determined by the method of E. E. Dubinina et al. [51]. Mycological studies from lesions include microscopic and cultural methods. In microscopic examination, pathological material is examined in unstained (native) preparations. To eliminate the pigment, hair and skin epidermal flakes were placed on a glass slide, where 1–2 drops of a 20% KOH or NaOH solution were subsequently added. To accelerate the clarification of the epidermal flakes, they were heated over the flame of an alcohol lamp until a delicate grayish rim appeared along the periphery of the drop, then they were covered with a cover slip and microscopy after 20-30 minutes. The hair was not heated, as this destroys their normal structure. Cultural studies were carried out by sowing pathological material on an artificial nutrient medium (Saburo).

The data obtained during the study were subjected to statistical processing on a Pentium-IV personal computer using the Microsoft Office Excel-2003 software package, including the use of built-in statistical processing functions. The methods of variational parametric and nonparametric statistics were used with the calculation of the arithmetic mean of the studied indicator (M), standard deviation (a), standard error of the mean (w), relative values (frequency, %), the statistical significance of the measurements obtained when comparing the average values was determined by the criterion Student (t) with the calculation of the probability of error (P) when checking the normality of the distribution (according to the kurtosis criterion) and the equality of general variances (Fisher's F-criterion). Significance level $P < 0.05$ was taken as statistically significant changes.

The distribution of patients into comparison groups and the algorithm of the studies performed are shown in pictures 3. and 4.



Pic.3 Distribution of patients into therapeutic comparison groups



Pic. 4 Research methods in patients with trichophytosis
 Data for biochemical studies served as a control from 20 healthy individuals who had no diseases skin.



CONCLUSIONS:

With trichophytosis in the blood, there is a more pronounced increase in proteolysis products in the acute phase of inflammation, which determine the degree of toxemia on the surface of the affected skin, FRO processes are determined (increase in O₂ '-NO₂' (NO₂' and NO₃), overexpression of HP and ONOO'. There is an increase in endogenous intoxication SSE, MSM, LII, CEC. The degree of violations revealed depends on the severity of the clinical course of trichophytosis, and is more pronounced in patients with subclinical hypothyroidism.

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