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Levothyroxine "intolerance" as a clue to an unexpected infection diagnosis

„Nietolerancja" lewotyroksyny jako przyczyna nieoczekiwanej diagnozy infekcji

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Abstract

Levothyroxine remains the standard therapy for hypothyroidism, and true intolerance to this medication is considered exceedingly rare. This report describes the case of a young female who developed nonspecific gastrointestinal and respiratory symptoms, initially attributed to levothyroxine intolerance. The subsequent occurrence of similar symptoms among family members, together with isolated eosinophilia identified on complete blood count, prompted consideration of an alternative aetiology. Parasitological evaluation confirmed infection with *Ascaris lumbricoides*. Following antiparasitic therapy, the patient's symptoms resolved fully. This case underscores the critical importance of comprehensive clinical assessment and differential diagnosis in patients presenting with atypical symptoms during levothyroxine therapy. Given the rarity of true levothyroxine intolerance, clinicians should thoroughly evaluate for alternative causes to avoid diagnostic error and inappropriate treatment modification.

Keywords: ascariasis, levothyroxine, intolerance

Streszczenie

Lewotyroksyna pozostaje standardowym lekiem w terapii niedoczynności tarczycy. Prawdziwa nietolerancja tego leku jest uważana za niezwykle rzadką. W artykule przedstawiono przypadek młodej pacjentki, u której wystąpiły niespecyficzne objawy ze strony przewodu pokarmowego i układu oddechowego, początkowo interpretowane jako nietolerancja lewotyroksyny. Pojawienie się podobnych dolegliwości u członków rodziny, wraz z izolowaną eozynofilią stwierdzoną w badaniu morfologii krwi, skłoniło do rozważenia alternatywnej etiologii. Badanie w kierunku pasożytów potwierdziło zakażenie glistą ludzką. Po zastosowaniu leczenia przeciwpasożytniczego objawy całkowicie ustąpiły. Przypadek ten podkreśla znaczenie kompleksowej oceny klinicznej i diagnostyki różnicowej u pacjentów z nietypowymi objawami podczas terapii lewotyroksyną. Biorąc pod uwagę rzadkość występowania prawdziwej nietolerancji lewotyroksyny, lekarze powinni dokładnie ocenić alternatywne przyczyny, aby uniknąć błędów diagnostycznych i nieodpowiednich modyfikacji leczenia.

Słowa kluczowe: glistnica, lewotyroksyna, nietolerancja

INTRODUCTION

Levothyroxine (LT4) is the standard first-line drug used in treatment of hypothyroidism. True LT4 intolerance is extremely rare, and caused mainly by intolerance to excipients[1].

CASE REPORT

A 32-year-old female reported to an endocrinologist with a diagnosis of autoimmune thyroid disorder and coeliac disease. LT4 had been prescribed during her second pregnancy, and withdrawn after delivery. During the following months she observed no clinical symptoms of hypothyroidism, and laboratory results were normal.

Three years after delivery, she started to experience fatigue, and developed symptoms including constipation, nausea, abdominal pain, sleep disturbances, and decreased exercise tolerance. Laboratory tests ordered by her general practitioner (GP) showed a TSH concentration of 4.2 mIU/L (reference range 0.3–3.8 mIU/L) with positive thyroid antibodies – aTPO(+) and aTg(+). A diagnosis of subclinical hypothyroidism and coeliac disease exacerbation was made, and the patient was prescribed LT4 at a dose of 25 μg/d.

A few days after initiating LT4 therapy, the patient developed urticaria and cough and was referred to an endocrinologist with a suspicion of LT4 intolerance. At that time, laboratory results showed a TSH concentration of 3.4 mIU/L with normal free hormone concentrations, and the patient had no clinical symptoms of hypothyroidism. Despite previous tolerance of LT4, a possible allergic reaction was considered, and a generic LT4 was prescribed.

The patient returned after a month with the information that the generic LT4 preparation produced the same outcome – urticaria, cough, and persistent abdominal pain, but with no diarrhoea. Moreover, the patient reported that due to persistent cough and "bad complete blood count (CBC) results" she was diagnosed by her GP with asthma and prescribed inhaled glucocorticoids. The patient assured that proper coeliac diet was used. Additionally, she reported that both of her children (aged 3 and 6) had started to present similar symptoms, and she planned to have them tested for coeliac disease and hypothyroidism.

As the patient lived in a woodland area, and the "bad CBC" appeared to be isolated eosinophilia, while the symptoms were not typical for LT4 intolerance, a suspicion of an infectious disease was raised. She was referred for an extended work-up for suspected parasitosis. Laboratory tests gave a positive result for *Ascaris lumbricoides* antibodies (IgG) at 16.3 U/mL (N > 11 U/mL). In stool samples from the patient and both of her children, the presence of human roundworm was confirmed. The patient began flubendazole therapy. Subsequently, she started to "tolerate" LT4. Next, both gastrointestinal and pulmonary symptoms resolved. At follow-up, while taking 25 μg LT4 per day, the TSH concentration was 2.4 mIU/L.

DISCUSSION

The presented case highlights how important it is to devote time to a thorough interview when evaluating patients with atypical symptoms. Practitioners should pay attention to the possibility of diagnosing atypical or rare diseases in patients presenting ambiguous symptoms. In the presented case, ascariasis and the cyclical symptoms correlated with this infection coincided with the period of taking medications, which delayed the correct diagnosis[2]. It is worth remembering that similar symptoms, especially gastrointestinal ones, occurring in family members, may point to infectious and parasitic diseases[3].

CONCLUSIONS

True intolerance to LT4 is extremely rare. When symptoms suggesting such a diagnosis occur, other conditions should be ruled out to avoid missing an alternative underlying disease.

Conflict of interests

The authors do not report any financial or personal connections with other persons or organisations which might negatively affect the content of this publication and/or claim authorship rights to this publication.

Author contribution

Collection, recording and/or compilation of data; writing of manuscript: ADD. Critical review of manuscript: MS. Final approval of manuscript: MS, GWK.

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