

Vol. 11 (2): 223-226 (2021)

METFORMIN REDUCES TSH IN HYPOTHYROID TYPE 2 DIABETIC PATIENTS

Yllka Themeli^{1,2,*}, Ilirjana Zekja^{1,3}

¹*Faculty of Technical Medical Sciences, University of Medicine, Tirana, Albania;*

²*“DIAMED” Diagnostic Center, Tirana, Albania;*

³*UHC “Mother Teresa”, Tirana, Albania;*

*Corresponding Author Yllka Themeli, e-mail: yllkathemeli@gmail.com;

Received January 2021; Accepted February 2021; Published March 2021;

DOI: <https://doi.org/10.31407/ijeess11.205>

ABSTRACT

Background: Metformin is an antidiabetic drug, especially important for type 2 diabetes treatment. Recently it has been reported that metformin is able to interfere with thyroid hormone profile in hypothyroid patients under levothyroxine treatment. However, no data are available for untreated hypothyroid patients or for euthyroid diabetic patients. Objective: To evaluate the correlation between metformin treatment and thyroid function in type 2 diabetic patients. The long-term effects of metformin on thyroid hormones were assessed in diabetic patients with primary hypothyroidism who were either untreated or treated with levothyroxine, as well as in diabetic patients with normal thyroid function. Results: After 2 years of metformin administration, a significant thyrotropin decrease ($P < 0.001$) was observed in diabetic subjects with hypothyroidism who were either treated ($n = 30$, from 2.74 ± 1.35 to 1.27 ± 1.17 mIU/l) or untreated ($n = 20$; 3.01 ± 0.21 vs 4.91 ± 1.12 mIU/L) with levothyroxine, but not in 50 euthyroid subjects. No significant change in free T4 was observed in any group. Conclusions: Metformin administration influenced thyrotropin levels without change of FT4 in patients with type 2 diabetes mellitus and concomitant hypothyroidism. For this reason, the need for reevaluation of thyroid function in these patients 6, 12, and 24 months after starting metformin is indicated.

Key words: Hypothyroidism, Subclinical Hypothyroidism, Type 2 Diabetes Mellitus.