Title: Metformin and thyroid diseases: a new perspective to understande the relevance of metabolism and thyrod disease

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An intriguing area of research in thyroidology is the recently discovered association of insulin resistance with thyroid functional and morphological abnormalities. Individuals with hyperinsulinemia have larger thyroid gland and a higher prevalence of thyroid nodules and cancer. Accordingly, patients treated with metformin have a smaller thyroid volume and a lower risk of incident goiter, thyroid nodule and cancer. Multiple studies in vitro and in vivo have demonstrated that metformin can inhibit the growth of thyroid cells and different types of thyroid cancer cells by affecting the insulin/IGF1 and mTOR pathways. Besides, metformin treatment was associated with a decrease in the levels of serum thyroid-stimulating hormone (TSH) in diabetic patients possibly by enhancing the effects of thyroid hormones in the pituitary and activating the adenosine monophosphate-activated protein kinase (AMPK). Based on this evidence, metformin appears to be a promising therapeutic tool in patients with thyroid disease. More clinical studies are necessary to evaluate the clinical significance of metformin for the treatment of thyroid diseases.

Biography

Shuhang Xu has completed his MD from Humbolt University in 2013. He is the associate cheif doctor of the department of Diabetes and Endocrinology, Jiangsu Province Hospital on Integration of Chinese and Western Medicine. He has published more than 20 papers in reputed journals and has been active in thyroid field in China.

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