

Diuretic-induced hyperglycemia is a determinant of diabetes epidemic

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Elevated blood glucose level (or hyperglycemia) above laboratory range of normal values (70-99 mg/dL or 3.8 – 5.5 mmol/L) is a common laboratory finding in patients treated with a diuretic. Among all the diuretics, thiazide diuretics are most notable for increasing blood glucose levels. Thiazide diuretics such as hydrochlorothiazide (HCTZ) or chlorthalidone are widely used to control blood pressure in hypertensive subjects. Blood glucose is elevated in some individuals more than others. However, this elevated glucose level or hyperglycemia produces no symptoms of polyuria, polydipsia or rapid weight loss which are common in established diabetes.

A question has been raised about the risk of hyperglycemia induced by diuretic therapy. Although controversies exist, there is a general consensus that diuretic-induced hyperglycemia is a reversible condition caused by volume depletion and decreased serum potassium level. Correction of volume and serum potassium reduces blood glucose level even if diuretics are to be continued.

Patients with diuretic-induced hyperglycemia are often labeled as Type 2 diabetics and prescribed oral antidiabetic agents. Since hypertension is more prevalent than diabetes, and because of the use of thiazide diuretic to treat hypertension, thiazide-induced hyperglycemia or diabetes is very common. Thus thiazide-induced diabetes has become synonymous with Type 2 diabetes giving rise to epidemic of diabetes which is unreal.

Thiazide diuretic is a cheap and effective blood pressure lowering agent and lowers the risk of hypertensive complications. Other drugs, in particular renin-angiotensin inhibitor drugs, lower blood pressure effectively, but they are far more expensive than thiazide diuretics albeit associated with serious adverse effects on the kidneys.

Therefore, according to these authors, thiazide diuretics are effective and safe. The complication of elevated glucose level is reversible and thus, inconsequential. At best, thiazide diuretics may predispose some patients for overt diabetes.

Biography

Dr. Mandal is a native of India and a naturalized citizen of the United States. He is board certified in Internal Medicine and Nephrology (kidney disease and hypertension). He is an author of many books and published articles on research in diabetes and kidney disease. He is a two-times Fulbright Scholar and a visiting professor in 23 countries that invited him to lecture on diabetes, high blood pressure, and kidney diseases.

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