



## THE ROLE OF POTASSIUM IN GLUCOSE INTOLERANCE

**Mazur Ecaterina**, Scientific Center of Medicines,

**Valica Vladimir**, Department of Pharmaceutical and Toxicological Chemistry, Nicolae Testemitanu SUMF

**Uncu Livia**, Department of Pharmaceutical and Toxicological Chemistry, Nicolae Testemitanu SUMF

### Introduction

Glucose intolerance can often be caused by severe hypokalemia due to a deficit in potassium balance (the normal serum potassium level in adults is 3.5–5.0 meq/L). Hypopotassemia is associated with impaired insulin secretion and decreased peripheral glucose utilization.

### Keywords

potassium, glucose intolerance, insulin, diabetes

### Purpose

The aim of the study is to analyze the role of potassium in formation of glucose intolerance that can result in increased risk for developing type 2 diabetes mellitus (T2DM).

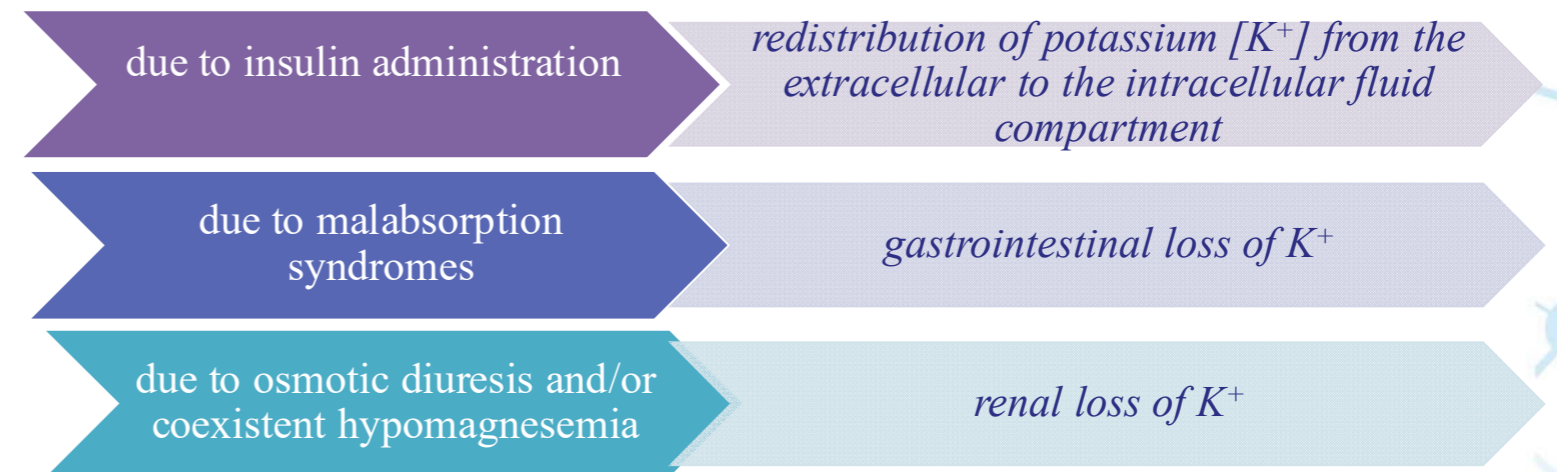
### Material and methods

Advanced bibliographic study of 41 bibliographic sources from databases: Medline, Scopus, HINARI, PubMed, Cochrane Electronic.

### Results

The analysis of the evaluated bibliographic sources showed the closed relationship between potassium deficit and glucose intolerance. It may occur in aldosteronism or prolonged treatment with diuretics. The mechanism of potassium to control of blood glucose is at a cellular level where potassium-induced cell

### *The causes of hypopotassemia in diabetics*



depolarization results in insulin secretion from pancreatic  $\beta$ -cells. According to the prospective cohort, it was found that high potassium intake may be associated with a decreased risk for T2DM. In addition, when patients with thiazide-induced hypopotassemia took potassium supplements, the defects in insulin release in response to glucose loads were corrected.

### Conclusions

Hypopotassemia is associated with impaired insulin secretion and decreased peripheral glucose utilization, leading to carbohydrate intolerance and hyperglycemia.

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