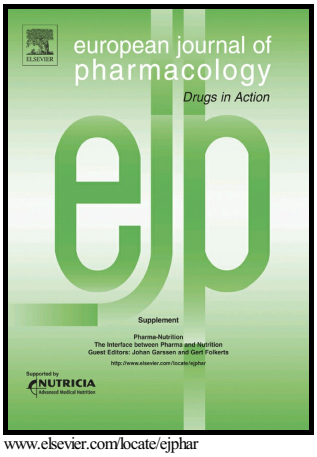

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Abstract:

Obesity due to excessive calorie intake is a known aggravating factor contributing to the development and progression of type 2 diabetes. Recently, excessive intake of sugar-sweetened beverages has presented challenges in stemming the tide of obesity. Here, we investigated the possible effects of sugar solution intake on the antidiabetic effects of sodium-glucose cotransporter 2 (SGLT2) inhibitor ipragliflozin in type 2 diabetic mice that were fed ordinary drinking water, water + glucose solution, or water + sucrose solution. Under all feeding conditions, all mice exhibited type 2 diabetic symptoms, including hyperglycemia, hyperinsulinemia, and obesity; ipragliflozin subsequently improved these symptoms through increases in urinary glucose excretion. Effective dose of and response to ipragliflozin for diabetes improvement did not significantly differ by feeding condition. Further, under all feeding conditions, ipragliflozin administration resulted in significantly increased intake of both water and sugar solutions in association with increased urine volume resulting from increased urinary glucose excretion. In sugar solution-fed diabetic mice, ipragliflozin