Caracterização farmacológica das gliflozinhas em plaquetas humanas isoladas: avaliação in vitro.


Abstract
Gliflozins are relatively recent drugs, and have been incorporated into the arsenal of the treatment of diabetics. To these, a favorable cardiovascular effect was attributed to clinical data from diabetic patients treated with similar therapies compared to glyphlozin. The project sought to investigate the performance of these drugs in platelets, since they are emblematic figures in the main pathophysiology of the disease that has the highest cause of death in the world: Coronary artery disease.

Key words:
glflozin, platelet aggregation, platelets.

Introduction
Recent clinical studies have shown that diabetic patients who received canagliflozin or dapagliflozin, drugs approved for the treatment of type II diabetes, had improvements in cardiovascular outcomes assessed as death from cardiovascular causes and fewer hospitalizations for congestive heart failure compared to patients who did not received canagliflozin or dapagliflozin. Arterial thrombosis and atherosclerosis are regulated by complex interactions involving several families of molecules present in platelets. Thus, the main objective of this project was to evaluate the in vitro effects of canagliflozin, dapagliflozin and empagliflozin on platelet-rich plasma and isolated platelets obtained from healthy volunteers and their effects on calcium mobilization, cyclic nucleotide levels and time activated partial thromboplastin (aPTT).

Results and Discussion
Gliflozins were able to inhibit platelet aggregation against the collagen agonist, ADP, thrombin and U-46619, a stable analogue of thromboxane A2. The results were better in the presence of the endothelial mediators against the collagen agonist. The mobilization of intracellular calcium in platelets was lower in the presence of canagliflozin and dapagliflozin. On the other hand, the glyphlozin did not significantly influence the levels of the cAMP and cGMP nucleotides and the APTT were not affected by the glyphlozin.

Conclusions
The favorable results lead to a partial clarification of the mechanism of action of these drugs in the platelet, directing the new steps of this investigation.

Acknowledgement
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