УДК 61:615.1(062)(476-25)
ББК 52я73
А 43
ISBN 978-985-21-1258-1

Dańkowska K., Lauko K., Nesterowicz M., Trocka D.

AMLODIPINE – A NEW ANTI-DIABETIC DRUG

Tutor: Dr. in pharm. sc., PhD, associate professor Maciejczyk M.
Department of Hygiene, Epidemiology and Ergonomics
Medical University of Bialystok, Bialystok, Poland

Relevance. Amlodipine is a long-acting dihydropyridine blocker of calcium channels. The effectiveness of drug in treating hypertension has been well-documented; however, alternative mechanisms of amlodipine action have also been postulated.

Aim: the study aimed to evaluate the antioxidant and antiglycation properties of amlodipine in an *in vitro* model.

Materials and methods. The experiment used glycated bovine serum albumin (BSA) as a protein oxidation/glycation model. Ribose was used as the glycation factor. Aminoguanidine (protein glycation inhibitor) and N-acetylcysteine (NAC; antioxidant) were used as reference substances. The intensity of protein glycoxidation was evaluated by measuring protein carbonyls (PCs), tryptophan (TRY), and Amadori products (AP) levels using colorimetric/fluorimetric methods.

Results and their discussion. Rib caused intensification of oxidative/carbonyl stress observed as increased content of PC and AP levels and also reduced TRY content versus BSA. NAC inhibited PC formation, suppressed AP level, and decreased TRY fluorescence. Aminoguanidine lowered PC concentration to BSA level and reduced AP content versus Rib. Amlodipine markedly inhibited AP level compared to the glycation factor and reduced PC concentration to BSA level.

Conclusion: the study demonstrated the antiglycation activity of amlodipine. Given that carbonyl/oxidative stress plays a crucial role in the pathogenesis of diabetes and its cardiovascular complications, additional investigations are necessary to confirm the antidiabetic action of amlodipine *in vivo*.