ABSTRACT

Muchová, A.: Antiplatelet activity of alkaloids and its potential use in the Alzheimer´s disease therapy. Diploma thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany, Hradec Králové, 2020.

According to recent studies, the pathophysiology of Alzheimer's disease, as a neurodegenerative disease, has been implicated in platelets and the associated haemostasis disorder, the release of inflammatory cells, which may result in the facilitation of amyloid plaque formation.

Alkaloids as alkaline nitrogen compounds, which have many effects on humans or animals. In connection with this issue, researchers are investigating the antiplatelet effect of many structural types of alkaloids.

The isoquinoline alkaloids of the families Lauraceae, Annonaceae, Piperaceae, Magnoliaceae and Papaveraceae are perpective for the study. In addition to their antiplatelet effects, they also have an antioxidant and inhibitory effect on acetylcholinesterase, which is also used in Alzheimer´s disease therapy.

Another promising substance is the pyrrolidinoindoline alkaloid Psm2, which was isolated from the plant *Selaginella moellendorffii* Hieron. It has an antiplatelet effect higher than the reference substance acetylsalicylic acid and is also associated with a lower risk of bleeding. Important representatives of antiplatelet activity are also found in β-carboline and carbazole alkaloids.

This work is a literary research, whose task was to summarize from available literary sources into perspective prospective alkaloids with antiplatelet role.

Key words: Alzheimer's disease, alkaloids, antiplatelet activity, platelets