STUDY OF ANTIOXIDANT ACTIVITY OF MEDICINAL PLANTS

Makhmaraimov Shavkat Tokhtashovich
Head of the Department of Pharmacology and Clinical Pharmacology, PhD
Khaitov Azizkhan Akhmetovich
Assistant of the Department of Pharmacology and Clinical Pharmacology.
Mukhammadiyev Oybek Bakhramovich
student of the 3rd course of treatment
all: Termez branch of Tashkent state medical university, Uzbekistan, Termez

Relevance: In recent years, it has been scientifically proven that free radicals and oxidative stress cause the development of various diseases in the body. Since artificial antioxidants can have a negative effect on health, bioactive substances obtained from natural sources - medicinal plants - are gaining importance. Therefore, determining the antioxidant activity of medicinal plants expands the possibilities of their use in the pharmaceutical, cosmetology and food industries.

The purpose of the study: The main purpose of this study is to study the antioxidant activity of local medicinal plants on a scientific basis, to identify their bioactive components and to evaluate their practical value. In particular:

- to determine the ability to neutralize free radicals in various medicinal plant extracts;
-comparing the effectiveness of aqueous and alcoholic extractions;
- analysis of the effect of flavonoids, phenolic acids and other natural antioxidant compounds on activity;
-recommendation of plants with high antioxidant potential for use in pharmaceuticals, biologically active additives and food industry.

Materials and methods: Plant materials: leaf, flower and root parts of locally grown medicinal plants were collected.

Extraction method: extraction was carried out in aqueous and alcoholic solutions. Determination of antioxidant activity: DPPH radical scavenging method; ABTS method; Ferric Ion Reduction Activity (FRAP) Assay. The results were statistically analyzed.

Research results: It was found that extracts of studied medicinal plants have a high level of antioxidant activity. Especially in plants with high content of flavonoid and phenolic compounds, the radical scavenging activity was stronger. Alcoholic solutions had a greater antioxidant effect than aqueous extracts.

Conclusion: As a result of the research, it was found that the extracts of local medicinal plants have significant antioxidant activity. Especially in plants with a high content of phenolic compounds and flavonoids, the property of neutralizing free radicals was more pronounced. When aqueous and alcoholic extractions were compared, higher antioxidant activity was noted due to the fact that alcoholic solutions allow the extraction of more bioactive substances.

These results show that medicinal plants as natural antioxidants are of great practical importance in the production of pharmaceutical, food industry and biologically active supplements. Also, plants with antioxidant properties are a promising source for

prevention and treatment of cardiovascular, metabolic and chronic inflammatory diseases associated with oxidative stress.

In the future, it is necessary to carry out additional research aimed at separating individual bioactive components of these plants, determining their molecular mechanisms of action, and creating standardized drugs.