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Antiviral Potential of Medicinal Plants Against HIV, HSV, Influenza, Hepatitis, and Coxsackievirus: A Systematic Review

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Abstract

Viral infections are being managed therapeutically through available antiviral regimens with unsatisfactory clinical outcomes. The refractory viral infections resistant to available antiviral drugs are alarming threats and a serious health concern. For viral hepatitis, the interferon and vaccine therapies solely are not ultimate solutions due to recurrence of hepatitis C virus. Owing to the growing incidences of viral infections and especially of resistant viral strains, the available therapeutic modalities need to be improved, complemented with the discovery of novel antiviral agents to combat refractory viral infections. It is widely accepted that medicinal plant heritage is nature gifted, precious, and fueled with the valuable resources for treatment of metabolic and infectious disorders. The aims of this review are to assemble the facts and to conclude the therapeutic potential of medicinal plants in the eradication and management of various viral diseases such as influenza, human immunodeficiency virus (HIV), herpes simplex virus (HSV), hepatitis, and coxsackievirus infections, which have been proven in diverse clinical studies. The articles, published in the English language since 1982 to 2017, were included from Web of Science, Cochrane Library, AMED, CISCOM, EMBASE, MEDLINE, Scopus, and PubMed by using relevant keywords including plants possessing antiviral activity, the antiviral effects of plants, and plants used in viral disorders. The scientific literature mainly focusing on plant extracts and herbal products with therapeutic efficacies against experimental models of influenza, HIV, HSV, hepatitis, and coxsackievirus were included in the study. Pure compounds possessing antiviral activity were excluded, and plants possessing activity against viruses other than viruses in inclusion criteria were excluded. Hundreds of plant extracts with antiviral effect were recognized. However, the data from only 36 families investigated through in vitro and in vivo studies met the inclusion criteria of this review. The inferences from scientific literature review, focusing on potential therapeutic consequences of medicinal plants on experimental models of HIV, HSV, influenza, hepatitis, and coxsackievirus have ascertained the curative antiviral potential of plants. Fifty-four medicinal plants belonging to 36 different families having antiviral potential were documented. Out of 54 plants, 27 individually belong to particular plant families. On the basis of the work of several independent research groups, the therapeutic potential of medicinal plants against listed common viral diseases in the region has been proclaimed. In this context, the herbal formulations as alternative medicine may contribute to the eradication of complicated viral infection significantly.

The current review consolidates the data of the various medicinal plants, those are Sambucus nigra, Caesalpinia pulcherrima, and Hypericum connatum, holding promising specific antiviral activities scientifically proven through studies on experimental animal models. Consequently, the original research addressing the development of novel nutraceuticals based on listed medicinal plants is highly recommended for the management of viral disorders.

Keywords: antiviral herbs; antiviral therapy; efficacy; medicinal plants; natural antivirals.

LinkOut - more resources

Full Text Sources

Ovid Technologies, Inc.
Wiley

Medical

Genetic Alliance
MedlinePlus Health Information

Miscellaneous

NCI CPTAC Assay Portal
NCI CPTC Antibody Characterization Program