International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

A Phytochemical Qualitative Analysis of Conium Maculatum Mother Tincture

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Abstract

Plants are treasure of the nature which provides nutritional and therapeutic benefits**.** Bioactive compounds that are found in plants are called phytochemicals. Conium Maculatum or Poison Hemlock, which is known as a poisonous plant, has a long tradition in conventional medicine. The list of bioactivities reported for this plant includes anti-inflammatory, antibacterial, analgesic and anticancerous. This plant is used as a homeopathic remedy that is utilized for the treatment of various medical conditions. This study intends to analyse the phytochemical components of homoeopathic mother tincture Conium Maculatum. Homoeopathic mother tincture Conium Maculatum is obtained and phytochemical qualitative analysis was done. It reveals the presence of Alkaloids, Flavonoids, Tannins, Terpenoids, steroids and absence of Saponins in homoeopathic mother tincture Conium Maculatum. Homoeopathic preparation of mother tincture possesses various phytochemical constituents.

Keywords: Conium Maculatum, Homoeopathy, Phytochemical

Introduction

Plants play an important role in human life, having nutritional and medicinal properties. People have been investigating nature, especially plants, for novel medications since ancient times. As a result, many medicinal plants with healing qualities are now used to treat a wide range of illnesses. A growing understanding of the significance of medicinal plants has emerged in recent years, and the kingdom of plants offers a treasure trove of possible medications. Medications derived from plants are widely accessible, less costly, safe, effective, and rarely cause adverse effects. This medicinal value of plants lies in some chemically active substances that produce a definite physiological action on the human body [1].

Conium Maculatum or Poison Hemlock, which is known as a poisonous plant, has a long tradition in conventional medicine. The plant and its active alkaloids have shown a variety of biological activities, including anti-inflammatory, sedative, antispasmodic, antibacterial, and anti-cancer effects [2]. Historical references suggest that Conium maculatum has potential medicinal uses in the treatment of various conditions, including dizziness, vertigo, inflammation, pain in stomach, pain of gastric ulcer, nervousness and restlessness, herpes and breast tumours [3].

Homoeopathy is a two-century-old empirical system of healing. Homoeopathic medicines are made from a variety of biologically active ingredients. Conium maculatum is a plant used in homeopathic

remedies that is utilized for the treatment of various medical conditions. It is used in cases of arteriosclerosis, caries of sternum, ascending paralysis, epithelioma, polypi, orchitis, hydrocele, peritonitis, gastritis [4]. Phytochemical qualitative analysis is a process of identifying and detecting the presence of various bioactive compounds in plant extracts.

In this present study, Conium Maculatum homoeopathic mother tincture was analysed for phytochemical components such as alkaloids, flavonoids, tannins, terpenoids saponin, and steroids.

Materials and Methods

Homoeopathic preparation of Conium Maculatum Mother Tincture obtained from GMP Certified Similia Homoeo Laboratory Pvt Ltd.

Phytochemical Screening- Qualitative Analysis

Qualitative analysis was done for Conium Maculatum homoeopathic mother tincture to identify the presence of the phytoconstituents by standard procedure.

1. Test for Alkaloids: Mayer's Test

The extract was evaporated in a test tube. To the residue dilute HCL was added, shaken well and filtered. To the 2-3 ml of filtrate Mayer's reagent was added. Formation of yellow precipitate showed the presence of alkaloids [5].

2. Test for Flavonoids: Alkaline reagent test

2 ml of 2.0% NaOH was mixed with extract; concentrated yellow colour was produced. This result showed the presence of flavonoids [6].

3. Test for Tannins: Lead Acetate Test

On addition of lead acetate solution to the extract white precipitate appeared [7].

4. Test for Saponin: Foam Test

Crude extract was mixed with 5ml of distilled water in a test tube and it was shaken vigorously. The formation of stable foam was taken as an indication for the presence of Saponins [8].

5. Test for Terpenoids:

To the test solution 2ml chloroform was added with few drops of conc. Sulphuric acid (3ml) at the side of the test tube. An interface with a reddish-brown coloration is formed if terpenoids constituent is present [9].

6. Test for Steroids: Salkowski Test

To 2 ml of sample, 2 ml of chloroform and 2 ml of conc. H_2SO_4 was added. The solution was shaken well. As a result, chloroform layer turned red and acid layer showed greenish yellow fluorescence [10].

Results

Phytochemical qualitative analysis of Conium Maculatum mother tincture revealed the presence of Alkaloid, Flavonoid, tannin, terpenoids and steroids and absence of saponins.

Table 1: Phytochemical Constituents in Conium Maculatum Mother Tincture

PHYTOCHEMICAL CONSTITUENTS	CONIUM MACULATUM MOTHER TINCTURE
ALKALOIDS	+
FLAVONOIDS	+
TANNINS	+
SAPONIN	-
TERPENOIDS	+
STEROIDS	+

Discussion

Medicinal plants are a gift from nature as they offer many health benefits to us. Medicinal plants are richest bio resource of drugs in traditional system of medicine. The chemically active substances that give plants their therapeutic qualities have certain physiological effects in humans. These phytochemicals have role in the protection of human health. The therapeutic plant Conium maculatum, often referred to as poison hemlock, has a long tradition unconventional medicine. It contains a variety of phytochemicals, including as polyacetylenes, flavonoids, and alkaloids, which have therapeutic benefits [11]. Flavonoids have a variety of biochemical properties, but the major property of almost every class of flavonoids is their antioxidant activity including suppression of Reactive Oxidative Species (ROS) formation [12].

Tannins have antiseptic property and this activity is due to presence of the phenolic group. Alkaloids have many pharmacological activities including anti-hypertensive effects, antibacterial action, antifungal effect and anti-cancer actions. Terpenoids have medicinal properties such as anti-carcinogenic, anti-

malarial, anti-ulcer, hepaticidal, antimicrobial and diuretic activity [13]. The mixture of sterols and sterolins enhances the cytotoxic ability of natural killer (NK) cells and enhances the immune system [14]. Through this study it is evident that Conium Maculatum mother tincture contains alkaloids, flavonoids, tannins, terpenoids and steroids that are responsible for the therapeutic action of the drug.

Conclusion

Thus it is apparent from the present study that homoeopathic mother tincture of Conium maculatum containing alkaloids, flavonoids, tannins, steroids and Terpinoids. These are the main constituents which contribute to the anti-inflammatory, anti-bacterial, antiseptic and anticancerous properties of the remedy. Further studies like Quantitative analysis, Chromatography techniques and GCMS Technique are to be conducted.

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