

**DISCUSSION ON ROLE OF NATURAL PRODUCTS IN
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Pilkhuwa, Uttar Pradesh****Dr. Devender Kumar****Research Supervisor Monda University, Delhi Hapur Road Village & Post Kastla,
Kasmabad, Pilkhuwa, Uttar Pradesh****ABSTRACT**

Because of their anti-proliferative and pro-apoptotic qualities, natural antioxidants and numerous phytochemicals have lately been recommended as anti-cancer adjuvant therapy. As a result, the ongoing quest for anticancer agents/compounds from plants has played a crucial role in determining how to make chemotherapy safer and reduce side effects, as natural herbal medicines have several benefits. Despite breakthroughs in medication research, new plant-derived therapies are still needed to combat cancer, which is the world's second largest cause of death. Natural herbal medications provide a number of benefits over the use of traditional chemical treatments to reduce the negative effects of chemotherapy. Chemotherapy has been used to introduce natural herbal medications since they have several benefits. Around 200 novel chemical compounds have been licenced to treat cancer over the last few decades, with half of them coming from structurally initially natural materials and their changes to be safe and beneficial. Organic compounds (e.g., terpenes, flavonoids, alkaloids, lignans, saponins, vitamins, glycosides, oils, and other secondary metabolites) play an important role in cancer cell proliferation inhibition and induction due to their structural variety.

Keywords: - Plants, Products, Therapeutical, Vitamins, Diverse.

I. INTRODUCTION

Plants are a significant source of novel natural products. Despite the availability of diverse methodologies for the development of therapeutical, natural products nevertheless remain as one of the finest repositories of novel structural kinds. Furthermore, Farnsworth asserts that 119 described medications are still produced commercially from higher plants and that 74 percent were identified through ethnobotanical knowledge.

Of the several hundred thousand plant species throughout the world, only a tiny number has been researched both phytochemically and pharmacologically. When one thinks that a single plant may have up to thousands of components, the prospects of discovering new discoveries become clear. The important component for the eventual outcome of an inquiry into bioactive plant ingredients is hence the selection of plant material. In light of the huge number of plant species potentially accessible for research, it is vital to have



effective techniques available for the quick chemical and biological screening of the plant extracts chosen for examination. Natural Products, particularly plants, have been utilised for the treatment of numerous ailments for thousands of years. Terrestrial plants have been employed as medicines in Egypt, China, India and Greece from ancient antiquity and an astounding number of contemporary pharmaceuticals have been generated from them. The earliest written documents on the medical usage of plants occurred around approximately 2600 BC from the Sumerians and Akkaidians (Samuelsson, 1999). The “Ebers Papyrus”, the best known Egyptian pharmacological record, which chronicled over 700 medications, depicts the history of Egyptian medicine dating from 1500 BC. The Chinese *Materia Medica*, which describes more than 600 medicinal herbs, has been carefully recorded with the oldest record dating from around 1100 BC (Cragg et al., 1997). Documentation of the Ayurvedic system reported in *Susruta* and *Charaka* dates from around 1000 BC (Kappor, 1990). The Greeks also contributed greatly to the logical development of the herbal medications. Dioscorides, the Greek physician (100 A.D.), recorded in his book “*De Materia Medica*” more than 600 therapeutic plants (Samuelsson, 1999). The World Health Organization estimates that around 80 percent of the world’s people depend on traditional medicine for their main health care.

II. CANCER

In India, cancer is a serious public health issue and is now one of the main causes of

death. Death rates from various forms of cancer have risen significantly over the previous two decades, according to estimates. Clinical research is essential in the battle against cancer because it may help diagnose and treat disease earlier and more effectively.

Out-of-control cell proliferation is a common feature of cancers. Every form of cancer is differentiated by the first cell type that is impacted, and there are over one hundred distinct varieties. When cancerous cells multiply uncontrolled, they create tumours, which are lumps or masses of tissue (except in the case of leukaemia where cancer prohibits normal blood function by abnormal cell division in the blood stream).

It is possible for tumours to develop and interfere with the gastrointestinal, neurological and circulatory systems, as well as releasing hormones that change the body's functions. Noncancerous tumours are those that remain in a single location for an extended period of time and show only modest development.

When two things happen, tumours become more hazardous, or malignant.

It's possible for malignant cells to invade and expand, creating new blood vessels in the process of angiogenesis, while killing good tissue in the process known as invasion. To describe a tumour that has spread to other regions of the body and continues to develop, infiltrating and killing healthy tissue, it is called metastasizing. Metastasis is the medical term for this process, and the end outcome is a terrible illness that is very difficult to cure.



III. ROLE OF NATURAL PRODUCTS IN MEDICINE

Even though they are centuries old, Ayurveda and Chinese medicine are the oldest systems of medicine still in use today. Their philosophical, practical, and experimental foundations are solid. Complementary and alternative medicine is seeing a surge in popularity as a result of increased side effects, the expensive cost of new pharmaceuticals, drug resistance, and novel ailments.

Many plant-based medicines have been introduced to the worldwide market as pharmaceutical corporations have shifted their focus to natural product-based medicinal research and discovery. Medical therapy and illness control have been influenced by these innovations. They were extracted from natural sources, many of which have been utilised by different societies throughout history.

Approximately 80 percent of the world's population relied on conventional medicine for health treatment at the beginning of this century. 74% of the most significant medications now in use include active components from medicinal plants, according to an estimate. Drug development was mostly relied on chance up until the 1970s. Only with the development of molecular biology and computers did rational drug discovery begin.

Natural product screening and isolation is a good option since it delivers compounds for a long time. Combinatorial chemistry, on the other hand, may produce molecular structures that could not have been predicted.

A combinatorial method is unlikely to have uncovered natural compounds' unique bonding and stereochemistry, which are difficult to synthesise. In recent years, several pharmaceutical firms have been adopting both combinatorial and isolation approaches.

Nature may be the finest combinatorial chemist in the world, according to a famous natural products chemist. Only time will tell which technique will prevail.

IV. ETHANOMEDICINE IN DRUG DISCOVERY

In ethanopharmacology, the observation, description, and experimental research of indigenous medications and their biological effects is a very varied approach to drug discovery. Ethanomedicine is the practise of treating human illness by the use of ethanol derived from plants. For millennia, people have relied on medicinal plants to heal a broad range of diseases. Plants that contain secondary metabolites have been linked to many of their medicinal properties. There are a variety of methods for determining which plants have the best chance of success in drug development. We stress the importance of ethnomedical knowledge and its usefulness for drug development in our work.

A growing number of people are turning to herbal remedies as a complementary and alternative medicine (CAM) because of its high antioxidant properties, low risk of adverse effects, and low cost. Methods for determining the antioxidant potential of various plants used in dietology were calibrated using ascorbic acid. New medications derived from medicinal plants



have benefited greatly from the use of active components derived from natural sources. Although antioxidant activities of phytochemicals have been the focus for many years, antioxidant impacts on cell signalling and gene expression are also acknowledged as being essential.

Ethnopharmacology as a distinct area of study is a relatively new concept. "The observation, identification, description, and experimental investigation of the ingredients and effects of such indigenous drugs is a truly cross-disciplinary field of research that is extremely important in the study of traditional medicine," the term was used in 1967 as the title of a book on hallucinogens, "Ethnopharmacologic search for psychoactive drugs." Today, the term is much more broadly defined. "The multidisciplinary study of biologically active compounds historically used or observed by man" is how ethnopharmacology is defined. There is no mention of research for novel bioactive medicines in this concept of indigenous usage (drug discovery). Various steps in the process of drug development are examined in this section. There are various steps to the discovery process. There must be documented usage of a naturally occurring substance for a therapeutic purpose as the first step. Taking into account the cultural practises linked with the claimed activity is essential in determining its likely origins. Scientific terminology must be used to identify and describe the item if there is any evidence of actual efficacy. As a result of these investigations, samples may be collected for further testing, which often includes tests for biological activity related

to chemical separation and structural determination as a possible explanation for the observed activity.

V. CONCLUSION

Plants and their components have long been utilised as raw materials in a variety of medical treatments. It is consequently critical to correctly identify medications and evaluate them on a scientific basis. The current study focussed on ethnopharmacologically significance of plant *Catunaregum spinosa* Thunb for antioxidant and anticancer properties, which has led us to further investigate these plants in order to find a novel lead molecule for various disorders.

Despite these significant contributions from the plant kingdom in the past, a large number of plant species have never been documented and remain unknown to science, and only a handful have been carefully searched for biologically active chemical ingredients to any extent. As a result, new plant sources of valuable and pharmaceutically intriguing compounds are likely to be found and produced in the future. Unfortunately, if current trends of tropical forest destruction and general biotic simplification continue, scientists interested in medicinal plant research may only have a few decades left to explore much of the rich diversity of the plant kingdom for useful new bioactive compounds, and many opportunities for successful drug development will almost certainly be lost. It is also critical that genetic resources that are endangered, vulnerable, or over-exploited be maintained to the maximum degree feasible for future generations who will have the



means (both technical and intellectual) to more wisely exploit and manage these species.

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