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A REVIEW ON PHYTOMEDICINE

Mohammad Ashraf Ansari[1], Pankaj Prajapati[1], Mohammad Suhail[1], Kanchan Sahni[1], Nidhi Gupta[2]*, Rakesh Bharatia[2] and Preeti Upadhyay[2]

[1]Institute of Technology & Management Gida Gorakhpur-273209.
[2]ITM College of Pharmacyand Research Gida Gorakhpur-273209.

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***Corresponding Author**
Nidhi Gupta
ITM College of Pharmacyand Research Gida Gorakhpur-273209.

ABSTRACT
Over the world, phytomedicines are gaining popularity. Patients with benign prostatic hyperplasia and prostate cancer are increasingly investigating complementary and alternative medicine, particularly in light of the risks of long-term morbidity and death associated with surgery. Prostate cancer rates are steadily rising, and while phytomedicines that have already been evaluated do offer some relief, their benefits are not all that different from those of more conventional therapies. This study examines the usage of phytomedicines for the treatment of prostatitis, prostate cancer, and benign prostatic hyperplasia in China, Western nations, and Africa. There are some listed herbal remedies that show promise, but further research is needed.

KEYWORDS: Phytomedicines metabolite pro filing, Tradition al medicine, Prehistoric. Etc.

INTRODUCTION

While complementary and alternative medicine (CAM) usage is rising quickly in industrialized nations, traditional medicine use is still common in underdeveloped nations. Due to their accessibility and affordability, locally grown medicinal plants are essential to basic healthcare, especially in rural areas where there are limited African phytomedicines available on the global market. Due to the danger of death and long-term morbidity associated with surgery, patients with prostate cancer and those with benignprostati chyperplasia (BPH) are increasingly in vestigating the use of complementary and alternative medicine (CAM). protocols. Inaddition, a-adrenergic blockers, 5a-reductaseinhibitors, and hormonal manipulation frequently cause unpleasant and undesired side effects. The grade of the tumor at presentation or the hormone-insensitive nature of the tumor cell population may alsorender these drugs ineffective.

History of Phytomedicine

In the area of ethno-veterinary medicine (EVM), Indiahas a rich historical legacy. Throughout history, plants and animal shave play edasign if cantrol einourpharmacopoeia, magico-religion, and culture.

Many villages still follow their tradition always, which isa test ament to their belief in folk medicine. The application of particular phytochemicals as treatments for a range of illnesses evolved over many centuries through trial anderror. The oldest medical system is Chinese, and it hasunder gonesign if icantchangesover time. The five elements and the yin and yang principle served as the found a tion for Chinese medicine about 5,000 year sago.

In the first century AD, Dioscorides developed De Materia Medica in Greece. Ancient Vedic literatures IAD. Ancient Indian texts known as the Vedas have long discussed the use of medicinal herbs to heal animal illnesses. For example, the "Yajurveda" and "Rigveda" emphasised the significance of medicinal plants, while the "Atharvaveda" highlighted the efficacy of native remedies in treating ailments. Animal illnesses have been treated using medicinal substances according to writings authored by Salihotra and Charaka (2350 BC) and Palikapya (1000 BC). vegetation. The origins of veterinary medicine can be traced back to the Mahabharat and the two Pandavas, "Nakul" and "Sahadev," who practiced it with regard to horses and cattle. Many active chemicals with therapeutic or pesticidal qualities were discovered by scientists in the 19th and 20th centuries, including morphine, salicylic acid, and pyrethroids (pesticides). Numerous labs began identifying phytochemicals in plants. In the 1980s, many. The identification of phytochemicals in plants for potential use in pharmaceuticals began in laboratories. Studies on the epidemiology of these phytochemicals have also been conducted.

Technology Developmentand Experimental Approaches

A thorough quantitative and qualitative examination of every metabolite found in a particular cell, tissue, or organism is known as metabolomics. Sometimes, the terms "metabolomics" and "metabolite profiling" are

used interchangeably. This is primarily because, unlike in genomics or proteomics, it is currently not feasible to analyze and display all of the metabolites in a metabolome in a single step due to the incredibly complex chemical makeup of biological systems, particularly those found in plants. The phrase more appropriately used for measuring the metabolite profiles, activities, and reactions toward the environment, medication, or disease of a given tissue or biological fluid is called "metabolonomics," which is frequently used instead of "metabolomics." Similar to metabonomics, metabolic fingerprinting typically refers to high-throughput global metabolite analysis that requires little sample preparation. Targeted and global (or un-biased) metabolite analysis are the two main methods used in metabolomics. As the name suggests, targeted metabolite analysis, also known as metabolite profiling, uses a specific combination of analytical techniques, such as gas chromatography–mass spectrometry (GC–MS), to focus on a subset of metabolites in a sample rather than a comprehensive metabolome analysis.

Combining mass spectrometry-liquid chromatography (LC-MS), in addition to a quantity estimate. The toolbox for metabolite analysis also includes a number of additional methods such as nuclear magnetic resonance (NMR), Raman spectroscopy, thin layer chromatography (TLC), and Fourier transform infrared spectroscopy (FT-IR).

Metabolomicsin Phytomedicine Research

It is anticipated that plant metabolomes would be significantly more complicated than those of mammals, with estimations indicating that over 200 000 molecules may eventually be found. Plant secondary metabolites are diverse and have developed through constant interaction with harsh and often hostile environments, as well as with distinct species and agronomic differences. These metabolites typically confer a particular bioactivity that is linked to their biochemical structures. Plant secondary metabolites are the source of a wide variety of well-known cancer chemotherapy medications, including paclitaxel (taxol), camptothecin (irinotecan, topotecan), and podophyllotoxins (etoposide, teniposide). There is a revived interest in pharmaceutical and nutritional research due to the huge potential of plant secondary metabolites or natural products to act as health care products or lead molecules for novel drug development.De novo combinational chemistry has only been involved in a small number of successful cases of the production of novel medications thus far, and many scientists continue to view natural compounds or their derivatives as the most prolific source of leads for drug discovery. Starting in the early 19th century, the isolation of active chemicals replaced the use of whole plants or extracts as medicines.

Mechanisms of Synergy Effects

Four pathways can be explored, based on the findings of the most recent studies in conventional pharmacological, molecular-biological, and clinical works.

1. Synergistic effects on several targets.
2. Physicochemical or pharmacokinetic effects based on increased bioavailability, resorption rate, and solubility.
3. Agent interactions with bacterial resistance systems.
4. The specific removal or neutralization of unfavorable effects by substances added to, removed from, or heated in the extract in order to provide an overall more effective result than would be possible in the absence of these additions or manipulations.

Therapeutic Approach

The previous section of this review addressed pharmacological in vitro and in vivo investigations that can be used to identify and quantify the synergistic effects of herbal medicine combinations. However, the outcomes do not provide conclusive proof of the therapeutic advantages or equivalents of these medication combinations when taken by humans. As a result, controlled clinical trials are required to confirm these findings. It's important to think about any potential negative consequences of combining herbal medicine extracts with synthetic medications or antibiotics for therapy.

"Pharmacokinetic" Effects Centeredon Amplified Bioavailability, Resorption Rate, and Solubility

In phyto-pharmacology, it is widely recognized that certain concurrent chemicals in an extract, such as polyphenols or saponins, which frequently don't have special pharmacological effects on their own, may enhance the extract's primary constituents' solubility and/or resorption rate, which will boost the extract's bioavailability almost in a pharmacokinetic manner and make it more effective overall than if each element were isolated. For instance, the existence of concurrent flavonoltriglycosides in the extract, which function as a resorption catalyzer, increases the efficiency of the leaf extract of Atropa belladonna, which contains l-hyoscyamin as its primary agent (List et al. 1969). Another illustration is provided by the extract from Ammi Visnaga. After ten minutes, Khellin, its primary agent, is fully bioavailable.

Helpful Herbals

Zea mays, the corn silk plant, is used to treat cystitis and urinary tract infections. It is beneficial for problems passing pee, such as prostate issues, and for frequent urination brought on by irritation of the bladder and urethral walls. It improves urine excretion and relieves discomfort by relaxing and soothing the lining of the bladder and urinary tubules. Epilobium sp., or willow herbs, have been used to treat prostatitis, hypertrophy, and cancer related to the prostate. After being separated from the pink willow herb (E. parviflorum), oenothein B was shown to be the active ingredient that inhibited 5a-reductase activity by w98x. Extracts from the rose bay willow plant (E. angustifolium) have been demonstrated

to cause a significant growth inhibition in prostatic epithelial cells.

SUMMARY

Using lectins, one may distinguish between benign cells and malignant tumors based on the degree of glycosylation, a marker of metastasis. Additionally, it has been shown that lectins exert ytotoxic effects on human tumor cells and impede their proliferation. Lectins Compared to the other lectin families, have drawn greater interest from cancer biologists because of their exceptional anti-tumor characteristics. The structurally similar lectins ConA, ConBr, and CFL cause apoptosis in the MCF-7 cell line. Leukemic cells' viability and proliferation are both decreased by lectins.

Leukemic cells are cytotoxically affected by ConA and ConBr lectins, as demonstrated by the MTT-based assay and total nucleic acid content (NAC) assays. In leukemic cells, lectins (Con A and Con Br) change the potential of the mitochondrial transmembrane and cause internucleosomal DNA breakage. Leukemic cells undergo apoptosis due to the activation of an intrinsic mitochondrial pathway by ConA and ConBr. In leukemic cells, lectins enhance the amount of ROS (Reactive Oxygen Species).

CONCLUSIONS

Prostatic illness is becoming more and more common. Additionally, because they are being utilized more frequently, phytomedicines are becoming more and more significant. A large body of research on the pharmacological actions and clinical evaluation of herbal medicines for prostatic disorders has been published. While certain research has verified the alleviation of symptoms through the utilization of herbal remedies, the exact mechanisms of action remain unclear. In order to fully utilize African traditional medicines as a medical resource, it is necessary to evaluate their safety, efficacy, and quality. Many herbal medicines have the potential to be beneficial, but further research is still needed.

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3. A. Department of Pharmacy, Center of Pharma Research, Ludwig-Maximilians- University, Butenandtstr. 5-13, HouseB, D-81377 Munich, Germany.
4. Ana Regina Casaroto, Vanessa Soares Lara, Department of Oral Pathology, Bauru School of Dentistry, University of São Paulo,Bauru,SP,Brazil.
5. A. Panossiana,n, G. Wikmana,n, J. Sarris Swedish Herbal Institute Researchand Development, Askloster, Sweden.
6. Department of Pharmacology, Vinayaka Mission's College of Pharmacy, Vinayaka Mission's Research Foundation (Deemed to be University), Salem -8, Tamil Nadu, India.
7. DepartmentofUrology,SchoolofMedicine,Facultyof HealthSciences,UniversityofPretoria,
8. P.O. Box667, Pretoria0001, SouthAfrica.
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