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ALTERNATIVE AND COMPLEMENTARY TREATMENT OF CANCER WITH PHYTOTHERAPY AND PHYTOCANNABINOIDS IN ECUADOR: A CASE REVIEW

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Abstract: According to the international agency for research on cancer (IARC), Cancer is the first cause of death worldwide, in 2020 almost 10 million deaths were attributed to this disease. (1) Oncological diseases are positioned in a global health crisis, raising the interest of using various complementary alternative practices and integrating in the health systems in Latin America. The World Health Organization, through the resolution of the World Health Assembly on traditional medicine (WHA62.13), recognizes the different practices of complementary alternative medicine as a strategy to reduce the current problems suffered by health care systems.(3). Health professionals have generally expressed positive opinions when Complementary and Alternative Medicine is used 'complementarily' and not as an 'alternative'. The results published so far have shown that CAM can contribute to improving the quality of life of cancer patients and their general well-being. (2). This cases review tries to demonstrate the importance of the integration and scientific development of the various practices of Alternative and Complementary Medicine where the various natural compounds such as phytocannabinoids, fungus, mineral and other native and ancestral elements become very valuable therapeutic targets to treatment different types of illness. Alternative and Complementary Medicine is helping to reduce the health care crisis that we are currently living in Ecuador and this kind of therapies can increase quality of life, well-being and help alleviate the pain of patients also when they die.

Keywords: Oncology, Alternative Therapies, Phytotherapy, Cannabis, Mycology, TCM (Traditional, Complementary Medicine), CAM (Complementary Alternative Medicine).

INTRODUCTION

Background:

¿WHAT IS CANCER DESEASE?

«Cancer» is a generic term used to designate a broad group of diseases that can affect any part of the body; There is also talk of "malignant tumors" or "malignant neoplasms." A defining characteristic of cancer is the rapid multiplication of abnormal cells that spread beyond their usual limits and can invade adjacent parts of the body or spread to other organs, in a process called "metastasis." The spread of metastasis is the leading cause of death from the disease. (1)

According to the international agency for research on cancer (IARC), Cancer is one of the leading causes of death worldwide in 2020 almost 10 million deaths were attributed to this disease. (1)

In Ecuador, more than 29,000 cancer cases was detected where malignant neoplasms are largely attributed to breast carcinoma and prostate cancer. (4)

COMPLEMENTARY ALTERNATIVE MEDICINE.

HISTORY AND CURRENT USES OF PLANTS AND PHYTOCOMPOUNDS IN ECUADOR AND THE WORLD

The use of plants and medicinal substances arises from the basic ancestral therapeutic target to treat various diseases. Plants, fungus and other natural compounds are important part for the development of life and have bonded together in evolution of the human being, the alternative and complementary health practices were not initially cataloged within the XXI western clinic medicine century, also in the beginning they were not considered a complement to other therapies, these practices have been used primitively for

thousands of years with the aim of healing, linked to our evolution as a species, not only with the aim of health but with the aim of research the various uses of plants and natural substances for a multiple purposes like social, economic and technological development.

In 1960 one Neanderthal burial was discovered, various plant substances was discovered such as resins, flowers, seeds and psychoactive plants dating back to more than 60,000 years BC. (11)

The close relationship and the different uses of natural compound was used in various cultures of the world to the present date there is no civilization that has not used plants as sources of food and medicine, even in the simplicity of mammals uses plants to improve their health and wellbeing.

The use of the secondary metabolites that come from plants have been researched and developed for thousands of years demonstrating safety and efficacy, the phytotherapy and herbal practices are not something of now, also today there are many scientific investigations that have been carried out in various countries of the world, science recognizes the therapeutic properties of phytotherapy and the plant of Cannabis become the most scientifically studied plant until the date.

The use of alternative and complementary therapies that in Ecuador are governed by the Ministerial agreement #00000037 regulations for the exercise of alternative and complementary therapies, in Ecuador access to traditional and complementary alternative medicine is a constitutional right.

COMPLEMENTARY ALTERNATIVE THERAPIES

PHYTOTHERAPY

Without herbalism and the empirical use of plants, the development of phytotherapy would

not have been reached, the multidisciplinary understanding and research of phytotherapy and phytotherapies who usually work together with various investigative sciences like botany, biochemistry, ethnobotany, herbalism, tropology, traditional medicine, veterinary medicine, etc. The extensive kingdom of vascular plants and their multiple uses needed several branches of research even when talking about health.

“The interpretation and acceptance of such evidence for phytotherapeutic practices vary in some countries, while in other countries phytotherapy is considered a form of traditional medicine.”(5)

MYCOLOGY (FUNGITHERAPY)

“Medicinal mushrooms have been used throughout human history for the treatment of various diseases, including cancer. At present they have been intensively studied to discover the chemical nature and the mechanisms of action of their biomedical capacity. Targeted treatment of cancer is not detrimental to healthy tissue, has become a desired goal in recent decades, and compounds of fungal origin provide a vast reservoir of potential innovative drugs. We demonstrate the complex and multilevel nature of its anticancer potential, based on different groups of compounds that can simultaneously attack various biological processes relevant to cancer treatment, focusing on specific targets. Specific approaches for malignant tissues. We show that some aspects of tumor fungal therapy are relatively well studied, while others still await to be fully unraveled. We also pay attention to cancer types that are especially susceptible to fungal treatments.”(6)

ENDOCANNABINOLOGY AND PHYTOCANNABINOIDS

“The Cannabis sativa L. plant has been used as a herbal remedy for centuries and is the most important source of phytocannabinoids.

The endocannabinoid system (ECS) consists of receptors, endogenous ligands (endocannabinoids) and metabolizing enzymes, and plays an important role in different physiological and pathological processes. Phytocannabinoids and synthetic cannabinoids may interact with components of the SEC or other cellular pathways and thus affect the development or progression of diseases, including cancer. In cancer patients, cannabinoids have been used primarily as part of palliative care to relieve pain, relieve nausea, and stimulate appetite. Additionally, numerous cell culture and animal studies have demonstrated the antitumor effects of cannabinoids in various types of cancer.” (7)

“In vitro and in vivo cancer models show that cannabinoids can effectively modulate tumor growth; however, the antitumor effects appear to be highly dependent on the type of cancer and the dose concentration of the drug. Understand how cannabinoids can regulate essential cellular processes involved in oncogenesis, such as progression through the cell cycle, cell proliferation, and cell death, as well as the interactions cannabinoids and the immune system, is crucial for improving existing therapeutic approaches and developing new protocols for cancer patients.” (7) (10)

In Ecuador in 2019 the use of medicinal cannabis was decriminalized, the author of this review collaborated with several entities such as the Public Defender’s Office and the Association of patients with catastrophic and degenerative diseases, the same ones who intervened in the regulation process and access to medical cannabis, currently the COIP (Integral Organic Criminal Code) decriminalizes the use of cannabis as a free substance less than 1% of Thc and just under special recipe more than 1% of Thc, likewise cannabis treatment it is recognizes in the practice of alternative therapies.

METABOLIC THERAPY- KETOGENIC DIET

“Although cancer remains one of the most important global challenges facing public health, the world still lacks complementary approaches that would significantly improve the efficacy of standard cancer therapies.

One of the essential strategies during cancer treatment is following a healthy eating program. The ketogenic diet (KD) has recently emerged as a metabolic therapy in cancer treatment, targeting cancer cell metabolism rather than a conventional dietary approach. The ketogenic diet (KD), a high-fat, very low-carbohydrate diet with adequate amounts of protein, has shown antitumor effects by reducing the energy supply to cells. This low energy supply inhibits tumor growth, which explains the therapeutic mechanisms of the ketogenic diet in cancer treatment.” (8)

VITAMINS AND MINERAL SUPPLEMENTS

“The supplementation of vitamin and minerals are very important in oncological disease; several investigations suggest that some vitamin supplements can help reduce metastasis and oncological complications.

Significant reduction in advanced cancers (metastatic or fatal) was found for those randomized to vitamin D compared to placebo. (9)

CONTRIBUTE TO IMPROVING THE QUALITY OF LIFE OF CANCER PATIENTS

Oncological diseases can be linked to several psychological and physiological health conditions, complementary alternative therapies maintain a fundamental focus on improving the quality of life of patients from appropriate care and personalized follow-up, review of the various oncological drugs and therapies to evaluate potential drug interactions

is the most important part of phytotherapy uses , a high percentage of patients seek alternative treatments without knowing the possible pharmacological reactions, the purpose of the alternative medical advice is to monitor the fito compounds and the alternatives therapies processes, optimizing the intake of water, maintaining a balanced diet and optimizing the supplementation of vitamins and minerals. There are several therapeutic resources that help improve the quality of life of our patients, increasing life expectancy and wellbeing in general.

DISCUSSION

Currently there are concepts of Western medicine, the same ones that are opposed to the concepts of CAM, this has generated a division and low effectiveness in access to research development and practice, it has a direct impact on the patient, a large percentage of patients seek alternatives complementary treatment and the Latin American population use the plants in their cultural uses, the integration of CAM into national health systems is priority to give a complete approach to the patient, currently there is confusion around plant extracts and quality standards same that can achieve an effective therapeutic target. Human rights, the world health organization and the ministry of health support the responsible scientific practices of CAM and confirm that they are an indisputable ally to support the patient in their quality of life.

CONCLUSIONS

CAM treat from a dynamic vision improving the quality of life of our patients seeing the human body as a whole, the therapeutic strategies can be approached from the alternative and complementary medicine this kind of therapies are very valuable even more when it comes to improving the quality

of life and help alleviate the pain of cancer patients, CAM not only is a complement in the conventional cancer treatment, they are also use by palliative therapies with the aim of improving the quality of life of our patients also when they die. The patient JC who comes to my office with a not encouraging diagnosis who seeks an alternative to treat his pathological condition due to more than 1 year of treatment with chemo and radiotherapy without results the patient JC being able to control oncological markers after a time of treatment with CAM, the liver enzymes are normalized and now he is in remission under encouraging diagnosis without evidence of tumor activity, now after 2 years of treatment with CAM patient JC has a resounding change in his quality of life, patient JC is currently under regular appointment's and still in remission.

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