

Essential oils in integrative oncology.

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Introduction

The fight against cancer involves a wide range of targeted actions ranging from the use of anticancer chemical substances estimated from 25% to 50%, although many of them are derived from plants, monoclonal antibodies, or targeted biological therapy, radiation therapy and/or stereotactic radiosurgery until use of natural substances. The ancient civilizations provided written evidences for the use of natural sources to treat various illnesses, as a 0020 Sumerian clay table with a list of the most valuable medicinal plants [1]. These latter in addition to reducing the frequent side effects of traditional therapies or directly to neoplasia, may engage in aid available to chemo/radiotherapy to increase the positive response.

The World Health Organization (WHO) evaluates about 80% of population in the developing countries relies on traditional herbal medicine for primary health care. Recently, a wide range of plant-derived phytochemical components and their synthetic derivatives have been suggested for cancer treatment. Surprisingly, more than 10,000 phytochemicals have been identified and used in cancer treatment due to their privileged structure and broad spectrum of biological activities [2,3].

When we speak in general of the use of natural substances we mean a series of actions with the most diverse disciplines: acupuncture, homeopathy and homotoxicology, ayurvedic medicine, herbal medicine. Within the latter we must consider the aromatherapy considering this method as the use of essential oils, highly volatile perfume substances extracted from plants in various ways [4].

Essential oils are obtained by extraction from aromatic vegetal material, rich in essences. The oils are usually extracted by distillation in steam current, that once cooled allows the essential oil from water separation; in the case of the epicarp of the fruit of the genus Citrus, it is also using cold pressing. The essential oils are contained in specific structures within various plant organs, such as leaves, flowers, petals and other parts of plants [5].

The use of aromatherapy is understood not only through smell but also includes all the topical applications (massages with aromatic oils, wraps) and oral inhalation. Among the

most ancient manifestations of the use of essential oils can we understand inhalation therapies that our ancestors did with rosemary, eucalyptus, mint? The decongestant preparations were for many years the only expression of this application. In more recent times aromatherapy is considered a support method to antibiotics or cancer [6].

Antibacterial and anti-inflammatory of Lavender or Melaleuca or with its active the Tea Tree oil extract, are the actions required. The Tea Tree oil is used as an antifungal, for the oral and vaginal candidiasis or for dermatitis, acne, eczema and psoriasis [7]. These methods of application based on essential oils are substances also been exploited in the field of oncology especially to relieve those that are the post-therapy problems.

Anti-inflammatory and soothing activity on the radio and chemotherapy irritations are the most used. Whereas this method is relatively young with a scientific literature on growth, new applications will also be directed to a study of the therapeutic potential of essential oils. They have already appeared the first studies on the action pro-apoptotic activity of *Melissa officinalis* on glioblastoma cells [8] or the Wild Celery on colon cancer cells [9]. Or the cytotoxic action of *Artemisia vulgaris* on leukemia cells [10].

A major study published in Phototherapy Research in 2014 has also highlighted the use of essential oils in synergy with conventional treatments. My thought for this type of treatment is that you could use as a new route of administration to treat the pathologies, given the rapid absorption, with a reduction of the dosages, when these standardized and with fewer side effects. We must conclude that the right therapy for cancer is one that we are all hoping for: the integrated oncology therapy.

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