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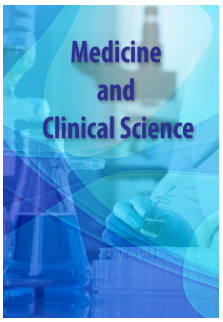

A Randomized Study of Complementary Supportive Medicine With Aloe Arborescens Vs Aloe Plus Myrrh In Metastatic Solid Tumor Patients Who Did Not Respond To The Standard Anticancer Therapies

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Abstract

The recent advances in the clinical application of the complementary medicine to cancer therapy have shown that some plants may potentially exert an antitumor activity due to the action of specific antitumor molecules, rather than a simple palliative effects. Then, the aim of the complementary medicine would have to be not only the improvement of the quality of life, but also the increase in the survival time. Alone and Myrrh represent some of the potential antitumor plants. On these bases, a randomized study was planned with Aloe arborescens solution alone or with Aloe arborescens plus Myrrh solution (60 to 40%) in patients with metastatic solid tumours, which did not respond to the conventional anticancer therapies.

Both agents were orally given at 10 ml twice/day. The study included 60 consecutive patients suffering from different solid tumour histotypes. Both therapies induced a disease control (DC) and the percentage of DC obtained in patients concomitant treated with Aloe plus Myrrh was significantly higher than that achieved in patients treated with Aloe alone. These preliminary results justify further clinical studies with potential antitumor plants to achieve a control of the neoplastic growth rather than a simple improvement in the clinical status of patients.

Introduction

After a long period of experimental and clinical oncological researches, carried out to identify possible environmental and psychosocial factors predisposing to cancer, in the last year many studies have demonstrated the existence of several natural anticancer molecules, either in human body, or in the vegetal world, able to opposite cancer growth by inhibiting cancer cell proliferation and stimulating the anticancer immunity. At present, the use of integrative and complementary therapies is widespread among cancer patients [1,2], without, however, a clearly define immunobiological objective. The recent advances in the knowledge of tumor growth and antitumor immune mechanisms may allow an interpretation of the efficacy of some medical plants in relation to their effects on cell proliferation and cytokine network, whose functionless influences host anticancer reaction. Aloe plant represents one of the most investigated and widely used potential antitumor plants [3,4]. The main potential antitumor molecules from Aloe consist of aloe-hemodine, acemannan, and glucomannan. Moreover, the Arborescens variety would contain greater amounts of active principles with respect to the Aloe Vera. Even though less known, Myrrh (Commiphora) would also represent an important potential antitumor plant because of the great number of natural anticancer molecules, including guggulsterone, and the sesquiterpene T cadinol [5- 8]. Aloe- and Myrrh-derived molecules have demonstrated their antiproliferative cytotoxic properties [3-8], while the investigation of their effects on cytokine secretion is still at the beginning. Previous preliminary clinical studies have already been demonstrated the well tolerability of both Aloe and Myrrh also in patients with very advanced disease and poor clinical conditions [9]. On these bases, a randomized study with Aloe alone versus Alone plus Myrrh in patients with metastatic solid neoplasms, who did not respond to the standard anticancer therapies, and eligible for the only supportive care.

Materials and methods

The study includes 60 consecutive advanced cancer patients. Eligibility criteria were, as follows: histologically proven solid tumours, measurable lesions, lack of response to the previous conventional anticancer

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Table 1. *Clinical characteristics and clinical response (WHO criteria) in untreatable metastatic cancer patients, who received Aloe Arborescens alone or Alone plus Myrrh solution.*

Patients	Aloe	Aloe plus Myrrh
n	29	31
M/F	17/12	15/16
Median age (years)	63 (38-86)	65 (36-85)
Tumor Histotype		
Colorectal carcinoma	6	5
Lung adenocarcinoma	4	5
Small cell lung cancer	2	2
Pancreatic adenocarcinoma	4	4
Gastric carcinoma	3	3
Biliary tract cancer	3	3
Gynaecologic tumours	2	4
Bladder cancer	1	1
Melanoma	3	2
Sarcoma	1	2
Metastasis Sites		
Nodes	5	6
Bone	2	3
Lung	7	7
Liver	10	9
Serouses	2	4
Brain	3	2
Clinical Response		
Complete response (CR)	0	0
Partial response (PR)	1 (4%)	2 (6%)
Stable disease (SD)	10 (34%)	17 (55%)
Disease control (CR+PR+SD)	11 (38%)	19 (61%)*
Progressive disease (PD)	18	12
*P< 0.05 vs Aloe alone		

therapies, including chemotherapy, endocrine therapy, anti-angiogenic therapy, targeted therapy and immunotherapy, no double tumour, and life expectancy less than 1 year. After the approval of the Ethical Committee, the clinical protocol was explained to each patient, and written consent was obtained. Patients were randomized to receive Aloe Arborescens solution, alone or in association with Myrrh. The dose of Aloe solution was 10 ml twice/day during lunch and dinner. Aloe plus Myrrh solution (Aloe to Myrrh ratio: 60 to 40%) (Mirral-Natur, Milan, Italy) was also administered at 10 ml twice/day. The clinical results were evaluated according to WHO criteria by repeating the radiological investigations, including CT scan, NMR, and PET at 3-month intervals. The results were statistically analysed by the chi- square test..

Results

As shown in Table 1, the two groups of patients treated with Aloe or Aloe plus Myrrh were well balanced for the main prognostic variables, including age, clinical status, tumour histotype and distant organ metastases. No complete response (CR) was achieved. A partial response (PR) was observed in one patient affected by anal carcinoma treated with Aloe alone and in two patients, respectively suffering from biliary tract cancer and rectal carcinoma, who received Aloe plus Myrrh. A stable disease (SD) was obtained in 10/29 (34%) patients of Aloe group (colorectal cancer:2; lung adenocarcinoma: 2; small cell lung cancer: 1; gastric cancer: 1; biliary tract cancer: 1; pancreatic cancer:1; ovarian cancer: 1; melanoma: 1) and in 17/31 (55%) patients of Aloe plus Myrrh group (colorectal cancer:2; lung adenocarcinoma: 3; small cell lung cancer: 1; pancreatic cancer: 2; biliary tract cancer: 2; gastric cancer: 1; endometrial cancer: 1; ovarian cancer: 2; bladder cancer: 1; sarcoma: 1; melanoma: 1). Then, the percentage of disease control (DC) (CR+PR+SD) achieved in patients concomitantly treated with Myrrh was significantly higher than that obtained in patients treated with Aloe alone (19/31 (68%) vs 11/29 (38%), P< 0.05). The remaining patients have a progressive disease (PD). Median duration of response was 4 months (range 3-6) for Aloe group and 6 months (range 3-9) for Aloe plus Myrrh group. Both Aloe alone and Aloe plus Myrrh were well tolerated, and no biological toxicity occurred. On the contrary, most patients referred an improvement in their subjective feeling.

Discussion

The results of this preliminary study, which was carried out to establish the impact of the complementary medicine in cancer patients who failed to respond to the common conventional anticancer treatments and for whom no other standard therapy was available, show that both Aloe arborescens alone and its association with Myrrh may exert in vivo anticancer effects, by counteracting cancer growth also in patients eligible for the only supportive care alone. The concomitant administration of Myrrh may furtherly enhance the antitumor activity of Aloe. These results are not surprising, since both Aloe and Myrrh contain several molecules capable of counteracting both cancer cells proliferation and the angiogenic processes. Moreover, according to the present results, all tumor histotype seem potentially to respond to the complementary medicine with Aloe ad Myrrh. Therefore, the aim of the complementary medicine would have to consist of a control of the neoplastic growth, rather than the only simple relief of cancer-related symptoms to improve the quality of life. Further studies by evaluating the immune status and response of patients will be required to better define the antitumor mechanisms of Aloe and Myrrh, as well as that of other potential antitumor plants [1,2], including Magnolia, Cannabis, and several mushrooms [10].

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