## World Academy of Science, Engineering and Technology International Journal of Mathematical and Computational Sciences Vol:14, No:12, 2020

## Ozone Therapy and Pulsed Electromagnetic Fields Interplay in Controlling Tumor Growth, Symptom and Pain Management: A Case Report

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Abstract: Background: The immune system has evolved several mechanisms to protect the host against cancer, and it has now been suggested that the expansion of its functions may prevent tumor growth and control the symptoms of cancer patients. Two techniques, ozone therapy and pulsed electromagnetic fields (PEMF), are independently associated with an increase in the immune system functions and they maybe help palliative care of patients in these conditions. Case Report: A patient with rectal adenocarcinoma with metastases decides to interrupt the clinical chemotherapy protocol due to refractoriness and side effects. As a palliative care alternative treatment it is suggested to the patient the use of ozone therapy associated with PEMF techniques. Results: The patient reports an improvement in well-being, in autonomy and in pain control. Imaging tests confirm a pause in tumor growth despite more than 60 days without using classic treatment. These results associated with palliative care alternative treatment stimulate the return to the chemotherapy protocol. Discussion: This case illustrates that these two techniques can contribute to the control of tumor growth and refractory symptoms, such as pain, probably by enhancing the immune system. Conclusions: The potential use of the combination of these two therapies, ozone therapy and PEMF therapy, can contribute to palliation of cancer patients, alone or in combination with pharmacological therapies. The conduct of future investigations on this paradigm can elucidate how much these techniques contribute to the survival and well-being of these patients.

**Keywords:** cancer, complementary and alternative medicine, ozone therapy, palliative care, PEMF therapy

Conference Title: ICSRD 2020: International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States **Conference Dates :** December 12-13, 2020