A pilot study with very low-intensity, intermediate-frequency electric fields in patients with locally advanced and/or metastatic solid tumors.

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Comment in:

Abstract

BACKGROUND: The transmission of electric fields using insulated electrodes has demonstrated that very low-intensity, properly tuned, intermediate-frequency electric fields, termed tumor-treating fields (TTFields), selectively stunts tumor cell growth and is accompanied by a decrease in tumor angiogenesis.

PATIENTS AND METHODS: This open, prospective pilot study was designed to evaluate the safety, tolerability, and efficacy profile of TTFields treatment in patients with locally advanced and/or metastatic solid tumors using the NovoTTF100A(TM) device. All 6 patients were heavily pre-treated with several lines of therapy; no additional standard treatment option was available to them. TTFields treatment using continuous NovoTTF-100A lasted a minimum of 14 days and was very well tolerated.

RESULTS: No related serious adverse events occurred. Outcomes showed 1 partial response of a treated skin metastasis from a primary breast cancer, 3 cases where tumor growth was arrested during treatment, and 1 case of disease progression. One mesothelioma patient experienced lesion regression near TTFields with simultaneous tumor stability or progression in distal areas.

CONCLUSION: Although the number of patients in this study is small, the lack of therapy toxicity and the efficacy observed in data gathered to date indicate the potential of TTFields as a new treatment modality for solid tumors, definitely warranting further investigation.

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