Dokumenttyp: journal article

Autor(en) des Beitrags: Vargas, HI; Dooley, WC; Gardner, RA; Gonzalez, KD; Venegas, R; Heywang-Kobrunner, SH; Fenn, AJ

Titel des Beitrags: Focused microwave phased array thermotherapy for ablation of early-stage breast cancer: results of thermal dose escalation.

Abstract: BACKGROUND: Tumor ablation as a means of treating breast cancer is being investigated. Microwave energy is promising because it can preferentially heat high-water-content breast carcinomas, compared to adipose and glandular tissues. METHODS: This is a prospective, multicenter, nonrandomized dose-escalation study of microwave treatment. Thermal dose was measured as (1) thermal equivalent minutes (cumulative equivalent minutes; CEM) of treatment relative to a temperature of 43 degrees C and (2) peak tumor temperature. Microwaves were guided by an antenna-temperature sensor placed percutaneously into the tumor. Outcomes measured were pathologic response (tumor necrosis) side effects. RESULTS: Twenty-five patients (mean age, 57 years) were enrolled. The mean tumor diameter was 1.8 cm. Tumoricidal temperatures (>43 degrees C) were reached in 23 patients (92%). Tumor size was unchanged after thermotherapy (P = not significant). Pathologic necrosis was achieved in 17 (68%) patients. Complete necrosis of the invasive component was achieved in two patients. One hundred forty CEM is predictive of a 50% tumor response, and 210 CEM is predictive of a 100% tumor response (P =.003). Univariate linear regression predicts that peak tumor temperatures of 47.4 degrees C and 49.7 degrees C cause a 50%
tumor response and a 100% tumor response, respectively. CONCLUSIONS: Thermotherapy causes tumor necrosis and can be performed safely with minimal morbidity. The degree of tumor necrosis is a function of the thermal dose. Future studies will evaluate the impact of high doses of thermotherapy on margin status and complete tumor ablation.

Zeitschriftentitel / Abkürzung:
Ann Surg Oncol

Jahr:
2004

Band:
11

Heft / Issue:
2

Seiten:
139-46

Sprache:
eng

Pubmed:

Print-ISSN:
1068-9265

TUM Einrichtung:
r Radiologie

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Institut für Radiologie > 2004

entries: