Computed tomography-guided percutaneous microwave ablation therapy for lung cancer

Y.H. Sun, P.Y. Song, Y. Guo and L.J. Sheng

Affiliated Hospital of Shandong Province Academy of Medical Sciences Oncology, Jinan, Shandong Province, China

Corresponding author: P.Y. Song
E-mail: songyapeng_syp@163.com

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ABSTRACT. This study evaluated the clinical efficacy and value of computed tomography (CT)-guided percutaneous microwave ablation therapy (PMAT) for lung cancer without surgical treatment. A total of 39 lesions in 29 patients with peripheral lung cancer were treated by CT-guided PMAT under local anesthesia. The microwave energy was 50-70 W at a frequency of 2450 MHz. The treatment was performed by using 1 or 2 points of ablation emission according to the size and shape of the tumor. Operations were completed in 29 patients. The average operating time was 8 min (range: 5-12 min). After PMAT, lower density in the ablated area was observed by CT. Pre- and post-treatment CT values were 52.60 and 26.12 Hu, respectively. Eight, 14, 4, and 3 patients achieved complete remission, partial remission, stable status, and progression, respectively, for an effectiveness rate of 75.86%. Complications included 5, 2, and 15 cases of pneumothorax, pleural effusion, and fever, respectively. No needle track implantation was observed. Mean progression-free survival was 14.6 months. The 1- and 2-year survival rates were 91.3 and 82.6%, respectively. Thus,
PMAT is a minimally invasive, safe, and effective treatment for lung cancer. It can improve quality of life, prolong survival, and improve the survival rate.

**Key words:** CT-guided; Percutaneous microwave ablation therapy; Lung cancer