



PERCUTANEOUS CT-GUIDED MICROWAVE AND CRYOABLATION OF LUNG TUMORS

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Objective:

The preferred treatment for lung cancer is surgical resection, but a large number of patients are not suitable for resection. CT-guided percutaneous ablation can play an important role in patients with lung cancer who are ineligible for surgery. Pulmonary metastases are very common, but many patients are not surgical candidates due to disease burden, location, or overall patient condition. The development of less invasive methods of local therapy, including SBRT and image-guided thermal ablation, has allowed local therapy to be offered to a greater number of patients.

Long-term prospective data is still not sufficient for lung cryoablation, but the largest studies of ablation demonstrated overall survival rates comparable to surgery and SBRT. Studies after ablation in patients with metastatic colorectal carcinoma to the lung demonstrated a favorable safety profile and acceptable local control (81–97%). Thermal ablation has several advantages over surgery and SBRT, including repeatability and sparing of normal lung parenchyma. Studies have shown that patients with oligometastatic disease are likely to develop new foci of lung involvement so the ability



to perform repeat treatments is essential. SBRT is limited in the number of lesions that can be treated due to accumulated toxicity to normal lung as well as cumulative skin and chest wall dose, while ablation is repeatable with little impact on pulmonary function. Ablation is also not limited by the segmental anatomy of the lung and can be used to treat central lesions that would require lobectomy. Advantages of cryoablation include the ability to visualize the ablation zone in near real time, reduced postprocedure pain relative to heat-based modalities and its flexibility, as cryoablation is considered safer than RFA or MWA for both central and subpleural lesions.

KBC Sestre Milosrdnice is the first center in Croatia to perform both microwave and cryoablation of small lung tumors and lung metastases on a regular basis. We aim to show our results after treatment of 32 patients at our center over the last 4 years. Our results show no significant impact on respiratory function and no signs of major postprocedural complications. The efficacy was followed with CT every 6 months after the procedure and showed results comparable to other larger studies and also to surgical outcomes with no local recurrence in 30/32 patients.

Percutaneous MWA and cryoablation are safe and effective minimally invasive methods for the treatment of small primary or secondary lung lesions.