

- Title** [Microwave versus radiofrequency ablation treatment for hepatocellular carcinoma.]
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- Reference** Busto Miramontes, Alicia, Paz-Valiñas, Lucinda. Ablación con microondas frente a la radiofrecuencia en el tratamiento de tumores hepáticos. Santiago de Compostela: Agencia Gallega para la Gestión del Conocimiento en Salud (ACIS). Unidad de Asesoramiento Científico-técnico (avalia-t) 2017. Serie Avaliación de Tecnoloxías. Consultas Técnicas; CT2017/01. Available from: <https://avalia-t.sergas.gal/DXerais/717/CT201701ablacionMicroondasHepat.pdf>

Aim

To assess the efficacy/effectiveness and safety of MWA versus RFA in the treatment of primary and secondary liver tumours.

Conclusions and results

Available evidence on the effectiveness and safety of MWA versus RFA in the treatment of hepatocarcinoma and hepatic metastases is limited, and is essentially based on observational studies of low methodological quality and a high degree of heterogeneity, which means that their results should be approached with caution.

On the basis of these studies, the effectiveness of MWA is observed to be similar to that of RFA in terms of complete ablation, as well as survival and disease-free time, with results that favour both techniques. Local tumour recurrence seems to be slightly less following the intervention with MWA versus RFA, and better in hepatic metastases.

In general, in larger-sized tumours of more than 3 cm and less than 6 cm, MWA would seem to be more effective than RFA.

Both MWA and RFA are interventions with comparable safety-result profiles and similar high and low complication rates and side-effect rates. Likewise, mortality rates do not differ between the two techniques. In peribiliary-site lesions, however, the results favour RFA, with more complications being observed among patients treated with MWA.

Cost-effectiveness studies that assessed MWA versus RFA were not identify.

Recommendations

Patients eligible for ablation treatment must be rigorously selected on the basis of their clinical status. Ablation in high-risk patients is inadvisable.

Local ablation could be considered a treatment option for patients who are in the early stages, have small-sized lesions, and are not candidates for surgery that might require a complex surgical intervention.

In patients fitted with pacemakers and/or other electronic implants, special care must be exercised, since their use is contraindicated due to the overheating of such devices by the thermal energy released in the case of MWA and the need for an earth wire in the case of RFA. In this regard, pacemakers should, where possible, be previously deactivated under the supervision and control of a Department of Cardiology or ICU.

Methods

A systematic search was made of the medical literature covering the main computerised biomedical databases, i.e., PubMed, Embase, ISI Web of Knowledge, Centre for Reviews and Recommendations, Cochrane, etc. To retrieve unpublished data, the process was completed by a search of the databases of ongoing studies. Two independent reviewers selected the papers in accordance with a series of pre-established selection criteria. The data were then extracted using a purpose-designed form and qualitatively summarised in evidence tables. Study quality was assessed using the “Oxford Centre for Evidence –Based Medicine Levels of Evidence Working Group”.

Further research/reviews required

There is a need for methodologically well-designed controlled randomised clinical trials with homogeneous comparative groups, to ensure that variables are comparable, internal validity is enhanced, and effectiveness and safety results can be extrapolated to clinical practice with an optimal degree of reliability.

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