Percutaneous radiofrequency ablation for hepatocellular carcinoma: Shortened duration does not compromise its efficacy

Radiofrequency ablation (RFA) is one of the curative treatments for very early stage (Barcelona clinic liver cancer [BCLC] Stage 0) and early stage (BCLC Stage A) of hepatocellular carcinoma (HCC) [1,2]. RFA has a slightly lower recurrence-free survival rate for early HCC compared with surgical resection, but RFA has a similar overall survival rate as resection [3,4].

The applicability of RFA is enhanced by recent advances in RFA techniques and instruments. New electrodes with high-power output to maximize the ablative area are available, such as perfused electrode, multipolar electrode, and a multiple switching system [5]. No-touch multibipolar RFA provide a better sustained local tumor control compared with monopolar RFA [6]. The accurate placement of an electrode is facilitated by imaging-guided RFA using imaging fusion of real-time ultrasound images combined with the established fusion of computed tomography/magnetic resonance imaging [7,8]. RFA can be also applied for intermediate- and large-sized HCCs by combination therapy (such as transarterial chemoembolization plus RFA) [9]. These recent advances of RFA have expanded the range of treatments of HCC [10,11]. As a result, the demand for RFA has significantly increased.

Technical strategies have been developed to maximize the performance of RFA [12]. However, there is no universal ablation protocol for the RFA procedure. In this study, Cheng et al designed a study to investigate this issue. They used an internally cooled electrode with a 3-cm uninsulated tip (Cool-tip radiofrequency system; Valleylab Inc., Boulder, CO, USA). The standard termination protocol takes 12 minutes for ablation, whereas the early termination protocol takes 9 minutes. The authors found that local tumor control rate (as assessed at Week 4 after RFA) and tumor progression rate (median follow-up of 23 weeks) were similar between these two groups. Cheng’s result implies that the recommended procedure time by the manufacturer may be too long for complete ablation. The procedure time can be shortened without compromising the local tumor control and tumor progression. This means that physicians can perform more RFAs within a certain time and the patients’ waiting time for treatment can be shortened.

Several drawbacks, however, need to be addressed. This study is a retrospective study, not a randomized study. The patient number in this study is small. There is a potential selection bias in allocating the patients to standard or early termination protocol. It is to be verified whether the early termination protocol used in this study is the most optimal one. The system used is Cool-tip radiofrequency system. It is unclear whether such conclusions can be generated to other systems.

Conflicts of interest

The author declares no conflicts of interest.

References


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