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Implications of the first edition of the Korean expert consensus-based practice recommendations for transarterial chemoembolization in the management of hepatocellular carcinoma

Jin Wook Chung[1,2,3]

[1]Department of Radiology, Seoul National University Hospital, Seoul; [2]Department of Radiology, Seoul National University College of Medicine, Seoul; [3]Institute of Radiation Medicine, Seoul National University Medical Research Center, Seoul, Korea

See Article "Transarterial chemoembolization for hepatocellular carcinoma: 2023 expert consensus-based practical recommendations of the Korean Liver Cancer Association" on Pages 241-261.

Transarterial chemoembolization (TACE) is the most common initial treatment for hepatocellular carcinoma (HCC) worldwide.[1-3] Currently, TACE is performed less frequently than in the past owing to earlier detection of HCC. This is also due to the more frequent use of curative modalities such as hepatic resection and local ablation, and the emergence of new therapies such as radioembolization and systemic therapies. However, TACE remains the most important treatment option when curative treatment is not possible. In addition, TACE is the most commonly performed initial treatment for tumors that recur after curative therapy.[4] Therefore, improving the safety and efficacy of TACE is critical for improving the overall survival of patients with HCC.

A standardized TACE protocol that maximizes safety and efficacy would be ideal. However, TACE is highly variable in its technical elements, including the choice of anticancer drug carrier (lipiodol vs. drug-eluting beads), a dose of anticancer drug or lipiodol, the method of preparing the lipiodol-anticancer drug emulsion, the choice of embolic material, the use of cone-beam computed tomography (CT), the determination of target vessels, microcatheter navigation to target vessels, and embolization endpoints. The device and equipment, as well as the skill and experience of the interventional radiologist, are also important variables. In addition, there is insufficient scientific evidence on the best technique for many technical aspects of TACE. For these reasons, TACE is not well standardized.

Recently, attempts have been made to reach an international consensus on TACE.[5,6] However, there are considerable variations in the practice of TACE among countries, particularly between Eastern and Western countries.[7] Although it is impractical to provide a single standardized international protocol for TACE, it is meaningful to provide national practice guidelines for safe and effective TACE procedures based on the current knowledge and expert opinions of a country.

In this issue of the *Journal of Liver Cancer*,[8] the first edition of Korean expert consensus-based practical recommendations for TACE was published, which was made possible by the collaboration of the Korean Liver Cancer Association and the Korean Society of Interventional Radiology.

National guidelines should reflect the practice context and environment of the country. The unique features of the cur-

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Corresponding author: Jin Wook Chung

Department of Radiology, Seoul National University College of Medicine, 103 Daehak-ro, Jongno-gu, Seoul 03080, Korea
Tel. +82-2-2072-2910, Fax. +82-2-743-6385
E-mail: chungjw@snu.ac.kr

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rent article can be summarized as follows: 1) emphasizing a personalized protocol for TACE, 2) encouraging the TACE procedure as selectively as possible, 3) understanding the difference between conventional TACE (cTACE) and drug-eluting-bead TACE (DEB-TACE) and applying it to practice, and 4) providing real-world practice information through an online survey of hepatologists and interventional radiologists.

The lack of standardization in TACE has been consistently pointed out as a drawback. I would like to say that the standardization of TACE is not always good. Unlike systemic therapy, repeating TACE at standardized doses and intervals is not recommended because it can worsen liver function and shorten overall survival. Instead of a standardized protocol, TACE protocols should be personalized based on tumor size or burden, tumor distribution and location, hepatic functional reserve, risk factors for complications, comorbidities, and patient performance status. The best way to minimize complications (minimize normal liver damage and avoid nontarget organ injury) and maximize the therapeutic effect of TACE is to perform it as selectively as possible. Interventional radiologists should be ready to utilize up-to-date cone-beam CT and microcatheter technology and improve the technical skills required to navigate a microcatheter to the target vessels.

In Korea, through active surveillance of high-risk individuals, most HCCs are detected at a size of 5 cm or less (3 cm or less in the case of surveillance); as a result, these small HCCs are highly associated with underlying liver cirrhosis and portal hypertension. Even after curative treatment for HCC, recurrence is quite common, and the vast majority of recurrent tumors are small; therefore, most TACE procedures in Korea are performed for small HCCs. With the introduction of DEB-TACE, selection of proper patient has become an important clinical question. Even though cTACE and DEB-TACE are equally recommended in international guidelines, the Korean experience with drug-eluting bead TACE and its role in practice is somewhat different from those in Western countries. Because small HCCs are predominating in Korea and the goal of superselective TACE in small HCCs should be "cure", it is important to evaluate the curative potential of superselective DEB-TACE in small HCCs. The current Korean practice recommendation included a statement that DEB-TACE shows a lower complete response rate than cTACE in small HCCs ≤3 cm based on clinical studies conducted in Korea and Japan.[8-11]

The results of the online survey of hepatologists and interventional radiologists included in this issue will be used to share the current state of TACE practice in Korea, guide clinicians toward the desired changes, and serve as a baseline for evaluating future changes.

I do not think this article resolves all the technical issues related to TACE. I hope that the first edition of the Korean expert consensus-based practice recommendations for TACE in the management of HCC brings attention to and motivates further research in this controversial area.

Conflict of Interest

Jin Wook Chung has received a research grant from Guerbet.

Ethics Statement

This editorial is fully based on the articles which were already published and did not involve additional patient participants. Therefore, IRB approval is not necessary.

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Data Availability

Data sharing not applicable to this article as no datasets were generated or analyzed during this study.

ORCID

Jin Wook Chung https://orcid.org/0000-0002-1090-6872

Author Contribution

Conceptualization, supervision, writing original draft, editing, approval of final manuscript: JWC

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