

# Prevention of post-embolization syndrome after transarterial chemoembolization for hepatocellular carcinoma – is prophylactic dexamethasone useful, or not?

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Hepatocellular carcinoma (HCC) is the most common cause of death from cancer worldwide (1). In some treatment strategy, transarterial chemoembolization (TACE) was established for the treatment of HCC when surgical resection or other local treatment is not indicated and the recommended first line-therapy for patients in intermediate stage (2). Although a relatively safe procedure, TACE is often associated with post-embolization syndrome (PES) such as a clinical syndrome mediated by an inflammatory response associated with the embolization itself and/or chemotherapeutic agent delivered (3,4).

Some studies have shown an association between inflammatory markers after TACE and worse survival (5,6).

So, TACE concede higher rate of PES and systemic adverse events such as liver abscess, leukopenia, liver failure and others.

PES is a common complication after embolic procedures, which includes fever, anorexia, and nausea/vomiting as presenting symptoms, is the most common side effect of TACE (7,8).

While the underlying mechanism of PES not well understood, release of inflammatory mediators in response to ischemic and/or necrotic tissue as well as the systemic effects of chemotherapeutics are proposed to contribute to its development (9).

Nausea and vomiting after TACE for HCC are common in clinical practice. However, few studies have reported the

incidence and risk factors of such events.

In an article published in the recent issue of *Hepatology*, Ogasawara *et al.* focused that prophylactic dexamethasone for TACE paying attention to preventing nausea and vomiting in TACE procedure (10).

Generally, several drugs such as dexamethasone, 5-HT<sub>3</sub> receptor antagonists, and aprepitant were confirmed to be effective against chemotherapy-induced nausea/vomiting by randomized control trials and are recommended by the American Society of Clinical Oncology (ASCO) (11).

Prophylactic treatment with corticosteroids including dexamethasone for prevention of PES after TACE has been used in clinical practice (12)

However, few studies demonstrated the efficacy of dexamethasone in preventing PES (12), and no well-designed randomized controlled trials thus far compared dexamethasone with placebo.

A total of 120 patients between October 2010 and June 2013 were randomly assigned to treatment groups. In this study, overall complete response (CR) rate was greater with the dexamethasone regimen than with the control regimen [47.5% (95% CI: 34.3–60.9%) *vs.* 10.2% (95% CI: 3.8–20.8%); *P*<0.001]. Cumulative incidences of fever, anorexia, nausea/vomiting were higher in the control regimen group than the dexamethasone group, respectively. The dexamethasone regimen was generally well tolerated by HCC patients including those with well-controlled diabetes

mellitus (DM) and those with hepatitis B virus infection. They confirmed that dexamethasone for prophylactic treatment of TACE-associated fever, anorexia, and nausea/vomiting was generally well tolerated by HCC patients including those with well-controlled DM or impaired glucose tolerance (IGT) and those with hepatitis B virus infection. Dexamethasone was effective in preventing fever, anorexia, and nausea/vomiting in patients after TACE with HCC (10).

Hence, steroids including dexamethasone are known to have lymphocytic effects and are therefore widely used as components of combination chemotherapy protocols for many malignant diseases. Steroid induced growth arrest and apoptosis of malignancy. However, there are a few case reports of tumor lysis syndrome in patients with malignancies treated solely with steroids (13). Therefore, it is thought generally that empirical therapy with steroids should be avoided especially in patients with large tumor burdens (14).

Furthermore, Kogut *et al.* reported that postembolization syndrome can be managed expectantly with antiemetic and analgesic medications alone, with avoidance of the undesirable effects attributed to dexamethasone. They have stopped routinely using prophylactic dexamethasone (15).

However, Ogasawara *et al.* reported that the dexamethasone was effective in preventing TACE-induced fever, anorexia, and nausea/vomiting in patients with HCC.

The dexamethasone-containing prophylactic regimen is more effective for the prevention of fever, anorexia, and nausea/vomiting in HCC patients receiving TACE. Further examination are needed the utility and tolerability of dexamethasone for prevention of PES with respect to TACE in a large study trial.

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## Footnote

*Conflicts of Interest:* The author has no conflicts of interest to declare.

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