Comments regarding “Hepatotoxicity by combination treatment of temozolomide, artesunate and Chinese herbs in a glioblastoma multiforme patient: case report review of the literature”

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Dear Editor,

We have a great interest of integrating Chinese Medicine and Western Medicine therapies after reading the manuscript “Hepatotoxicity by combination treatment of temozolomide, artesunate and Chinese herbs in a glioblastoma multiforme patient: case report review of the literature” by Thomas Efferth and his fellows. However, we have some concerns about this case report for clinical treatment of glioblastoma multiforme (GBM).

We carefully analyzed this case report to prevent similar incidents in the clinical practice. The authors of this paper specialized in Pharmacology, Immunology and Oncology, but not specialized in Traditional Chinese Medicine (TCM). Therefore, they did not illustrate details of TCM treatment. We knew that patient with GBM received surgical treatments and post-surgery radiochemotherapy with *temozolomide* (TMZ), and post-surgery patient also received an active ingredient of TCM artesunate (ART) and compound Chinese herbal formula with *Coptis-Kush*. These two forms of Chinese herbs may cause severe hepatotoxicity (Efferth et al. 2016). The clinical treatment of GBM is a comprehensive approach. Surgery is primary treatment. Radiochemotherapy and biotherapy are the supportive therapies. TMZ is one kind of alkylating agents, with the characteristics of high fat soluble, small molecular, and able to pass blood–brain barrier easily. Currently TMZ is a widely accepted standardized chemotherapy in

Oncology (Alnaami et al. 2013). Radiochemotherapy may lead to multidrug resistance and many side effects, such as hepatotoxicity, vomiting, nausea, lack of appetite, headache for oncology patients. Thus, compound Chinese herbal formulas are commonly utilized during radiochemotherapy (Chung et al. 2016). Lately there are many reports about *anti-glioblastoma* therapies with compound Chinese herbal formulas to control the tumor proliferation, prevent multidrug resistance, improve the efficacy, reduce the toxicity, and prevent cancer relapse. Compound Chinese herbal formulas may become one of the preferred treatments for *glioblastoma* (Lv et al. 2014). If we intend to apply TCM to treat tumors and achieve clinical efficacy of TCM, such as increase resistance to the immunosuppressive effects of chemotherapy drugs, stimulate macrophages to produce interleukin-6 and tumor necrosis factor. Clinicians should follow the principle of TCM differential diagnosis and syndrome differentiations for utilizing Chinese herbal formula safely and effectively (Wang et al. 2016). This case report did not follow the TCM differential diagnosis and syndrome differentiations. Thus, the inappropriate Chinese herbal formula was given, unable to achieve desirable efficiency and caused negative effects (Efferth et al. 2016). Chinese herbal formulas are holistic with synergistic effect of different herbs (Wang et al. 2016), not just one pharmacological effect from a single herb.

Many TCM practitioners would be interested in this case report for utilizing Chinese herbal formula to reduce the radiochemotherapy side effects for cancer patients. Thus, we sincerely hope Thomas Efferth and his fellows could provide details of the present history and symptoms of this case report. It would be helpful to know personalized radiochemotherapy based on clinical symptoms and to utilize Chinese herbal formula with appropriate TCM differential diagnosis as an optimal supportive treatment to

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reduce radiochemotherapy side effects (Chung et al. 2016). It would be beneficial for clinicians to utilize TCM differential diagnosis and Chinese herbal formula to treat tumor as a complementary therapy.

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Compliance with ethical standards

Conflict of interest No competing financial interests exist.

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