Online Submissions: wjg.wjgnet.com
wjg@wjgnet.com
doi:10.3748/wjg.15.1018

World J Gastroenterol 2009 February 28; 15(8): 1018-1019
World Journal of Gastroenterology ISSN 1007-9327

LETTERS TO THE EDITOR

Triptolide and management of systemic malignancies besides pancreatic carcinomas

Shailendra Kapoor

Shailendra Kapoor, Kristin 24, Schaumburg, IL 60195, United States
Author contributions: Kapoor S contributed all to this work.
Correspondence to: Shailendra Kapoor, MD, Kristin 24, Schaumburg, IL 60195, United States. shailendrakapoor@yahoo.com
Telephone: +1-846-7868978 Fax: +1-846-6787896
Received: December 24, 2008 Revised: January 16, 2009
Accepted: January 23, 2009
Published online: February 28, 2009

Abstract

The recent article by Zhou *et al* was highly interesting and thought provoking. The authors have clearly shown that triptolide administration is associated with up-regulation of the *Bax* gene, resulting in an attenuating effect on cell growth in gastrointestinal malignancies such as pancreatic carcinomas. The article by Zhou *et al* is all the more important because it highlights the rapidly increasing role of triplodide in the management of systemic malignancies. For instance, triptolide acts on the PI3K/Akt/NF-κB pathway, thereby enhancing apoptosis secondary to the administration of bortezomib in multiple myeloma cells. Similar synergisms are seen when triptolide is administered along with 5-fluoruracil for the management of colonic carcinomas. Similarly, triptolide causes down-regulation of the *Bcl-2* gene, resulting in control of cell growth in tumors, such as glioblastoma multiformes.

Key words: Triptolide; *Bax* gene; *Bcl-2* gene; SDF-1/CXCR4 pathway; Acute T lymphocytic leukemias

Kapoor S. Triptolide and management of systemic malignancies besides pancreatic carcinomas. *World J Gastroenterol* 2009; 15(8): 1018-1019 Available from: URL: http://www.wjgnet.com/1007-9327/15/1018.asp DOI: http://dx.doi.org/10.3748/wjg.15.1018

TO THE EDITOR

The recent article by Zhou *et al*[1] was highly interesting and thought provoking. The authors have clearly shown that triptolide administration is associated with up-regulation of the *Bax* gene, resulting in an attenuating effect on cell growth in gastrointestinal malignancies, such as pancreatic carcinomas[1]. The article by Zhou *et al*[1] is all the more important because it highlights the rapidly increasing role of triplodide in the management of systemic malignancies.

For instance, triptolide acts on the PI3K/Akt/NF-κB pathway thereby enhancing apoptosis secondary to the administration of bortezomib in multiple myeloma cells[2]. Similar synergisms are seen when triptolide is administered along with 5-fluoruracil for the management of colonic carcinomas[3]. Similarly, triptolide causes down-regulation of the *Bcl-2* gene resulting in control of cell growth in tumors, such as glioblastoma multiformes[4]. In fact, triptolide, when combined with ionizing radiation in the therapy of pancreatic carcinomas, decreases cell survival in these tumors by almost 21%[5].

Triptolide also inhibits the SDF-1/CXCR4 pathway and thereby has an attenuating effect on lymphoid metastatic, as well as proliferative activity in non-Hodgkin lymphoma cell lines[6]. Similarly, triptolide demonstrates anti-proliferative effects in other hematological malignancies, such as acute myeloid leukemia. In fact, the anti-carcinogenic effects of triptolide in malignancies, such as acute myeloid leukemia are markedly enhanced by other agents such as AraC[7]. Recent studies also confirm that triptolide has a negative effect on proliferation in acute T lymphocytic leukemia[8]. These anti-carcinogenic functions of triptolide are in part secondary to its anti- angiogenic properties[9].

More recently, Xu *et al*[10] have developed polymeric micelles of triptolide which appear to demonstrate anti-carcinogenic properties without affecting host immunity. These recent developments further highlights the immense therapeutic potential of triptiolide and the need for further research to fully assess its anti-carcinogenic potential.

REFERENCES

1 **Zhou GX**, Ding XL, Huang JF, Zhang H, Wu SB, Cheng JP, Wei Q. Apoptosis of human pancreatic cancer cells induced by Triptolide. *World J Gastroenterol* 2008; **14**: 1504-1509
2 **Yang M**, Huang J, Pan HZ, Jin J. Triptolide overcomes dexamethasone resistance and enhanced PS-341-induced

apoptosis via PI3k/Akt/NF-kappaB pathways in human multiple myeloma cells. *Int J Mol Med* 2008; **22**: 489-496

3 **Tang XY**, Zhu YQ, Tao WH, Wei B, Lin XL. Synergistic effect of triptolide combined with 5-fluorouracil on colon carcinoma. *Postgrad Med J* 2007; **83**: 338-343

4 **Zhang C**, Cui GH, Liu F, Wu QL, Chen Y. Inhibitory effect of triptolide on lymph node metastasis in patients with non-Hodgkin lymphoma by regulating SDF-1/CXCR4 axis in vitro. *Acta Pharmacol Sin* 2006; **27**: 1438-1446

5 **Wang W**, Yang S, Su Y, Xiao Z, Wang C, Li X, Lin L, Fenton BM, Paoni SF, Ding I, Keng P, Okunieff P, Zhang L. Enhanced antitumor effect of combined triptolide and ionizing radiation. *Clin Cancer Res* 2007; **13**: 4891-4899

6 **Pigneux A**, Mahon FX, Uhalde M, Jeanneteau M, Lacombe F, Milpied N, Reiffers J, Belloc F. Triptolide cooperates with chemotherapy to induce apoptosis in acute myeloid leukemia cells. *Exp Hematol* 2008; **36**: 1648-1659

7 **Lin J**, Chen LY, Lin ZX, Zhao ML. The effect of triptolide on apoptosis of glioblastoma multiforme (GBM) cells. *J Int Med Res* 2007; **35**: 637-643

8 **Yao GH**, Luan JF, Ye D, Yan JM, Lei QH, Zhu PY, Jin J. [Effects of triptolide on proliferation and apoptosis of jurkat cell line in acute T lymphocytic leukemia] *Zhongguo Shiyan Xueyexue Zazhi* 2008; **16**: 506-509

9 **He MF**, Liu L, Ge W, Shaw PC, Jiang R, Wu LW, But PP. Antiangiogenic activity of Tripterygium wilfordii and its terpenoids. *J Ethnopharmacol* 2009; **121**: 61-68

10 **Xu L**, Chen H, Xu H, Yang X. Anti-tumour and immunomodulation effects of triptolide-loaded polymeric micelles. *Eur J Pharm Biopharm* 2008; **70**: 741-748

S- Editor Tian L **L- Editor** Ma JY **E- Editor** Zheng XM