CORRESPONDENCE

Tanshinone ⅡA: a Potent, Natural Anti-carcinogenic Agent for the Management of Systemic Malignancies

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To the editor: I read with great interest the recent article by Li, et al[1]. The authors have clearly shown that tanshinone ⅡA inhibits myocardial cell hypertrophy induced by angiotensin Ⅱ by inhibiting p-ERK1/2 expression. Interestingly, tanshinone ⅡA also has potent anti-carcinogenic properties. As a result, tanshinone ⅡA is rapidly emerging as an agent with considerable promise in the field of oncology.

For instance, Wang, et al[2] and Dong, et al[3] have shown that tanshinone ⅡA alters the expression of ADPRTL1 and thereby attenuates tumor growth as well as metastasis in breast cancer cells as well as in neurological tumors such as gliomas. Tanshinone ⅡA also decreases the expression of the bcl-2 gene and thereby causes G_2/M arrest and subsequent inhibition of tumor growth in gastric carcinomas[4]. Tanshinone ⅡA is also active in inducing apoptosis in leukemias such as acute promyelocytic leukemias[5]. Tanshinone ⅡA also decreases the proliferation of vascular smooth muscle cells and may thus have an additional role in attenuating tumor growth in highly vascular malignancies[6]. Similarly, tanshinone ⅡA down-regulates the expression of nucleophosmin in the nucleus of osteosarcoma cells and thereby has a negative effect on growth of these tumors[7]. Similarly, exposure of HepG2 cell lines to tanshinone ⅡA for a period of 24 h decreases G_1 cells by almost 23%, clearly demonstrating the efficacy of tanshinone ⅡA as a potent apoptotic agent in these cells[8,9].

Besides these anti-carcinogenic properties, tanshinone ⅡA also decreases the synthesis of interleukin-6 and thus plays a modulating role in systemic inflammatory processes[10]. For instance, it attenuates inflammatory hepatic damage secondary to concanavalin A[11]. As is clear from the above examples, tanshinone ⅡA is a potent anti-carcinogenic agent which has a promising future in oncology. There is a clear and urgent need for further large scale studies to evaluate its efficacy in other malignancies as well as a need to increase awareness about its beneficial applications amongst oncologists.

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