Emerging anticarcinogenic effects of fluoxetine besides its role in the treatment of breast carcinomas

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To the editor,

I read with great interest the recent article by Zhou et al. in a recent issue of your esteemed journal [1]. The article is highly thought provoking. Interestingly, over the past few years, new data has emerged that reveals the emerging anticarcinogenic role of fluoxetine in systemic tumors besides breast carcinomas.

For instance, fluoxetine attenuates the expression of cyclooxygenase-2 and alters 5-HT pathways thereby reducing proliferation in colon carcinomas [2]. It also attenuates the formation of microvasculature within the colonic tumors. Formation of dysplastic aberrant crypt foci is also decreased in colonic tissue. Fluoxetine also significantly reduces multidrug resistance in colon carcinomas to agents such as doxorubicin. It does this by attenuating the efflux of intracolonic cell doxorubicin while simultaneously enhancing the accumulation of doxorubicin in the colonic cells by almost 32 % [3].

Similarly, fluoxetine activates NF-kappaB resulting in activation of caspase-3 and subsequent necrosis in tumor cells in ovarian carcinomas. Fluoxetine also exerts its anticarcinogenic effects by modulating the permeability of mitochondrial membranes [4]. As a result, there is increased

expression of p53 and a decline in intracellular bcl-2 level along with simultaneous augmentation of levels of Bax.

Clearly, fluoxetine significantly decreases multidrug resistance and enhances apoptosis in certain carcinomas. Further studies are needed to further elaborate the anticarcinogenic potential of fluoxetine in oncology.

References

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