Letter to the Editor

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Fenofibrate: direct attenuating effects on tumor growth

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The recent article by Liu et al. [1] provided for highly stimulating and interesting reading. Interestingly, recent data suggests that fenofibrate may directly attenuate tumor growth in a number of systemic malignancies.

For instance, fenofibrate is of benefit in mitigating tumor progression in prostatic malignancies. It has a negative impact on intercellular coupling via gap junctions between the cancerous cells [2]. Cancer cell motility is significantly attenuated. The ultimate result is marked inhibition of tumor growth. Similar benefit has been noted in endometrial malignancies. Fenofibrate administration results in G_1/S phase arrest. Cyclin D1 expression is significantly decreased. It also results in accentuated intra-tumoral apoptosis. The anti-neoplastic effects of fenofibrate are especially more pronounced when used in conjunction with retinoic acid [3].

Inhibition of tumor growth is also seen in hepatocellular malignancies secondary to the administration of fenofibrate. Accentuated G_1 phase arrest is typically seen. It mediates these anti-neoplastic effects by virtue of attenuation of Akt activation within the cancerous cells. "C-terminal modulator" protein levels are up-regulated as are p27 levels [4]. E2F1expression is down-regulated. Interestingly, these anti-neoplastic effects are independent of the peroxisome proliferator-activated receptor α (PPARα) inhibition. Similar effects are seen in oral squamous cell carcinomas. It especially affects carcinogenesis in oral tissue thus inhibiting the formation of oral malignancies. It mediates this role, in part, by down-regulating cyclooxygenase-2 expression in oral squamous cell carcinomas [5]. A negative impact on "epidermal growth factor receptor" expression in oral squamous cell carcinomas is also seen simultaneously.

It is obvious from the above examples that fenofibrate has significant anti-neoplastic effects. Further studies are needed to fully harness these anti-tumor effects.

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