Fusaric acid: a novel agent and mechanism to treat HNSCC.


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Abstract

OBJECTIVE:
A new class of carboxylic acids has tumoricidal activity for head and neck squamous cell cancer (HNSCC). Fusaric acid (FA) can chelate divalent cations, especially zinc, and inactivate zinc finger proteins involved in DNA repair and protein synthesis.

METHODS:
2 squamous carcinoma lines were utilized for in vitro and in vivo portions of this study. Cell counting and flow cytometry were used to analyze cells in culture in treatment and control groups over 96 hours. HNSCC subcutaneous implants were created in treatment and control groups of BALB-c nude mice (N = 30).

RESULTS:
In vitro studies demonstrated significant changes in cell numbers and cell cycle. In vivo studies of daily intrallesional therapy for 1 month also showed reduced onset of growth and overall growth compared to controls.

CONCLUSION:
FA appears to have a tumorstatic/tumoricidal effect on HNSCC. Further nude mice studies are needed to optimize dosing and administration regimens for FA in anticipation of clinical trials.

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