

Cromolyn for pancreatic cancer– question

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I know this is not quite a nutrition question, but thought this group might have advice since it involves absorption of a drug...

My mom was recently diagnosed with pancreatic cancer. The chemo of choice is Gemox, which is Gemcitabine with Oxyplatin (sp?). You may know this is only moderately effective.

There was a study on mice at M.D. Anderson medical center in which they realized Cromolyn, in combination with the Gemcitabine, had a MUCH more powerful impact on the tumors than the Gemcitabine alone.

Since no human studies have been approved yet– I think they are trying to improve the method of delivering it to the tumor– it is frustrating to know that there is this OTC medication that could help her, and almost certainly can't hurt (compared to the near–certain prognosis of pancreatic cancer).

My question is, if we wanted to simply add OTC cromolyn (sold for allergies and asthma) to her regimen, what is the best method to get a substantial amount into her body. The inhaler, or should we try to convince a doctor to prescribe the tablet (cromolyn sodium) that gets mixed in water? I read that absorption through the intestines is only 1% which is why, perhaps, they are trying to work on delivery. Would inhalation be more effective? They also have eyedrops which I assume are not effectively absorbed?

Thanks. Below is some of the info from abstract.

Background: We previously found that S100P, a member of the S100 protein family, is expressed in more than 90% of pancreatic tumors and is associated with tumor growth and invasion. In the current study,

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we

investigated the ability of the antiallergy drug, cromolyn, to block S100P function. Methods: Interactions between cromolyn and S100P were investigated using a drug affinity column and by examining cromolyn's effects on coimmunoprecipitation of S100P and receptor for advanced glycation end–products (RAGE). The effects of cromolyn on cell growth,

invasion, and nuclear factor–B (NFB) activity of pancreatic cancer cells with (BxPC–3 and MPanc–96) and without (Panc–1) endogenous S100P

were investigated by cell proliferation assay, by cell invasion assay,

and by luciferase reporter gene assay, respectively. The effects of cromolyn on tumor growth in vivo were investigated in three orthotopic

models (n = 20 mice per model) by administration of cromolyn (5 mg/kg body weight, daily) with and without gemcitabine (125 mg/kg body weight, biweekly), the drug currently used to treat pancreatic cancer.

Tumor growth was assayed by reporter gene expression. All statistical tests were two–sided. Results: S100P was retained on a cromolyn affinity column. Cromolyn blocked the coimmunoprecipitation of S100P and RAGE. In vitro, cromolyn (100 μ M) inhibited S100P–stimulated Panc–1 cell proliferation (S100P, mean = 0.93 U, versus S100P + cromolyn, mean = 0.56 U, difference = 0.37 U; 95% confidence interval [CI] = 0.24 to 0.49 U; P = .001, n = 3), invasion (S100P, mean = 58.0%, versus S100P + cromolyn, mean = 9.4%, difference = 48.6%; 95% CI = 38.8% to 58.8%; P < .001, n = 3), and NFB activity (S100P, mean = 14 460, versus S100P + cromolyn, mean = 7360 photons/s, difference = 7100 photons/s; 95% CI = 3689 to 10 510 photons/s; P = .005, n = 3).

In vivo, cromolyn inhibited tumor growth in mice bearing tumor with endogenous S100P (BxPC–3: control, mean = 1.6×10^9 photons/s, versus cromolyn, mean = 4.4×10^8 photons/s, difference = 1.2×10^9 photons/s; 95% CI = 6.2×10^8 to 1.6×10^9 photons/s; P < .001, n = 5;

MPanc–96:

control, mean = 1.1×10^{10} photons/s, versus cromolyn, mean = 4.8×10^9 photons/s, difference = 6.2×10^9 photons/s; 95% CI = 1.9×10^9 to

1.0×10^{10} photons/s; P = .009, n = 5) and increased the effectiveness

of gemcitabine (BxPC–3: gemcitabine, mean = 9.2×10^8 photons/s, versus combination, mean = 1.8×10^8 photons/s, difference = 7.4×10^8

photons/s; 95% CI = 4.5×10^8 to 1.0×10^9 photons/s; P < .001;

MPanc–96: gemcitabine, mean = 4.1×10^9 photons/s, versus combination,

mean = 2.0×10^9 photons/s, difference = 2.1×10^9 photons/s; 95% CI =

4.4×10^8 to 3.8×10^9 photons/s; P < .001). However, cromolyn had no effect on growth of tumors lacking S100P (Panc–1). Conclusion:

Cromolyn binds S100P, prevents activation of RAGE, inhibits tumor

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growth, and increases the effectiveness of gemcitabine in experimental models.