

Alterations of mast cell mediator production and release by gamma-linolenic and docosahexaenoic acid.

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The purpose of our investigations was to evaluate the supposed beneficial effects of gamma-linolenic (GLA) and docosahexaenoic acid (DHA) in a canine mastocytoma cell line (C2) as a model for canine atopic dermatitis. Cells were cultured in a basic medium (DEH) and in DEH supplemented with 14.3 microM GLA (DEH-GLA) or 14.3 microM DHA (DEH-DHA) for 8 days. Chymase and tryptase activity, as well as histamine and prostaglandin (PGE(2)) release were measured. To stimulate histamine and PGE(2) release, cells were incubated with the wasp venom peptide mastoparan (50 microM) for 30 min. GLA increased tryptase activity and decreased histamine release after C2 stimulation. DHA diminished PGE(2) production in activated C2. These results support the prescription of GLA- and DHA-enriched diets to reduce inflammatory signs in canine atopic dermatitis.

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