

Effect of dietary macronutrients on aflatoxicosis: a mini-review

ABSTRACT

Aflatoxin is a toxin produced by *Aspergillus* species of fungi. The main route of aflatoxin exposure is through the diet. Indeed, long-term aflatoxin exposure is linked to the development of hepatocellular carcinoma (HCC). Aflatoxin causes aflatoxicosis, which can be affected by several factors and is prevalent in many developing Asian and African countries. This mini-review discusses the effects of carbohydrate, fat and protein on aflatoxicosis based on findings from animal and human studies. It was found that high carbohydrate intake enhanced aflatoxicosis occurrence, while low ingestion of carbohydrate with caloric restriction slowed the symptoms associated with aflatoxicosis. Additionally, diets with low protein content worsened the symptoms related to HCC due to aflatoxin exposure. Nevertheless, a study reported that a high-protein diet favored detoxification of aflatoxin *in vivo*. There were also conflicting results on the influence of dietary fat, as high ingestion of fat enhanced aflatoxicosis development as compared with a low-fat diet. Moreover, the type of fat also plays a significant role in influencing aflatoxin toxicity. In regard to food safety, understanding the influence of macronutrients toward the progression of aflatoxicosis can improve preventive measures against human and animal exposure to aflatoxin.

Keyword: Aflatoxicosis; Carbohydrate; Fat; Macronutrients; Protein