Thesis Title Studies on the influence of pyridoxine deficiency on dimethylnitrosamine-induced hepatotoxicity.

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ABSTRACT

Hepatotoxicity and carcinogenicity of dimethylnitrosamine can be altered by many factors, mainly those which might interfere with the metabolism of the compound, such as, nutritional status or vitamin deficiencies. Pyridoxine or vitamin B_6 is of interest because pyridoxine phosphate play an important role in the intermediary metabolism as a coenzyme for a wide variety of metabolic transformation of amino acids. Weanling male Wistar rats were fed with semipurified agar-gel control diet until 30 days old, then rats were fed on one of two diets for 6 weeks : (a) control diet (b) pyridoxine deficient diet. Food intake were significantly decreased in pyridoxine deficient rats. Body weight gain and % weight gain in pyridoxine deficient rats were lower than those in control diet rats, apparently at the third weeks and second weeks, consequently. Pyridoxine deficiency for 6 weeks also affect organ size, since, liver weight were significantly decreased in pyridoxine deficient rats. The *in vitro* metabolism of DMN was determined by examining hepatic DMN-demethylase I and II activites, and found that pyridoxine deficiency mainly enhanced DMN-demethylase II activity with less effect on DMN-demethylase I. However, no differences were found in acute hepatotoxicity and lethality of DMN in both groups.