

**HISTOLOGICAL STUDY OF THE EFFECT OF
METHOTREXATE ON THE MUCOSA OF THE SMALL
INTESTINE IN YOUNG IMMATURE ALBINO RAT
WITH SPECIAL REFERENCE TO THE PROTECTIVE
ROLE OF VITAMIN A.**

Thesis

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(Histology)

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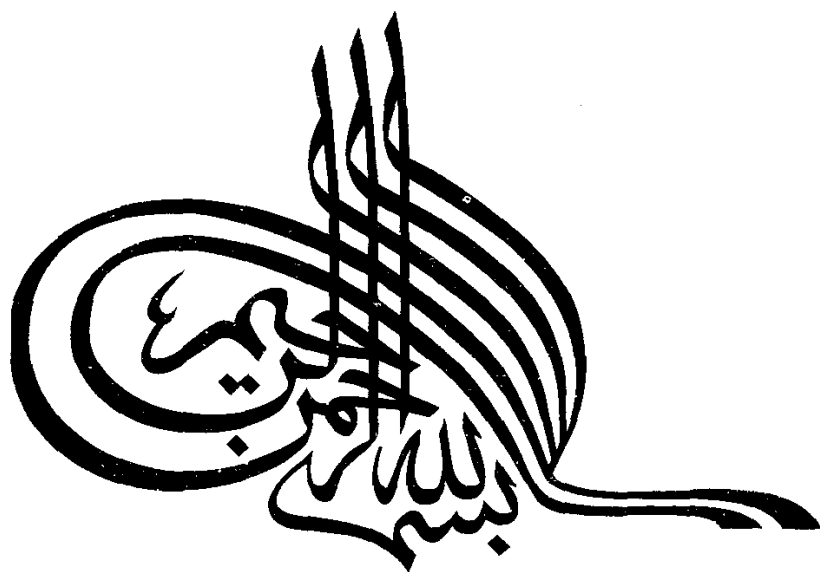
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To
My family

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*Introduction
and
Aim of the Work*

INTRODUCTION AND AIM OF THE WORK

Children of acute lymphoblastic leukemia (ALL) and cancer patients undergoing methotrexate therapy, experience a variety of side effects. These are specially confined to changes in the gastrointestinal tract structures, as ulcerative stomatitis and diarrhea are frequent side effects and require interruption of the therapeutic regimen. Even haemorrhagic enteritis and death from intestinal perforation may occur (*Gilman, Goodman, Rall and Murad, 1985*).

Funk and Baker (1991) described the effect of the drug on the gut of rats at 24 and 48 hours after intraperitoneal injection of 2 mg/ kg body weight. It was characterized by stoppage of mitosis in the crypts, shortened villi and depressed activity of intestinal enzymes.

In view of enzymatic activity, *Ramadan, Yousif and Ali (1992)* reported an increase in the activity of the non specific esterases which could be due to the role of these enzymes to control the toxic effects of methotrexate.

Nagai, Horie and Awazu (1993) recorded that co-administration of Vitamin A with methotrexate had a protective effect on the small intestinal mucosa.

Most of the studies concentrated on the effect of the drug on the mucosa of adult rats, inspite of the wide use of methotrexate in the management of acute

lymphoblastic leukemia in children. Hence, it was important to study the changes in the mucosa of young immature rats during drug therapy.

The aim of the present study is to evaluate the effect of methotrexate on small intestinal mucosa in young immature rats below the age of 2 months, during the critical periods of small intestinal growth (breast feeding and food dependency), also to predict the protective role of vitamin A coadministration.