

Postnatal Development Study of Stomach and Small Intestine of Cape Hare (*Lepus Capensis*) in Al-Muthanna Province

Summary The aim of the current study use histological and histochemical methods to look into how developed each of stomach and small intestine of cape hares. 35 pups were used and divided into 5 groups (7 each group) according to age in a day (One, Ten, Fifteen, Forty, and Ninety) without detection their sex. For gross study; location, parts, length and weight of the stomach and small intestine , to histological and histochemical purposes; the samples included (cardiac, fundic and pyloric parts of the stomach; duodenum, jejunum and the ileum of the small intestine), samples fixed by formalin 10% then treated by routine histological technique. The sections were stained by, Harries hematoxylin and eosin, Alcian blue PH 2.5, Periodic acid Schiff, companied Alcian blue plus Periodic acid Schiff, Mallory Trichrome, and Toluidine blue stains. Grossly, the lengths and weights of the stomach in One, Ten, Fifteen, Forty, and Ninety days ages were (4.37±0.74, 6.5±0.92, 6.75±1.03, 9.25±1.03, 13±1.06 cm) (8.5±0.92, 33.5±1.77, 38.75±1.03, 58.75±2.31, 65.62±4.17 gm) respectively. The stomach was simple monogastric and the shape of it was exchanged with the progress of age; empty sac, then a longitudinal sac and then J-shaped, with thin walls and located on the left side of the abdominal cavity. The small intestine was divided into; duodenum; jejunum and ileum, lengths and weights of the small intestine varied with age; in One, Ten, Fifteen, Forty, and Ninety day ages were (92.5± 2.67, 139.37±1.76, 161.87±3.72, 238.12±1.88, 262.5±3.77cm) (16.5±1.30, 24.87±0.83, 29.25±1.03, 43.37±0.51, 50.75±1.03gm) respectively. All ages have sacculus rotundus dispersed which contributed to immunity function in the gut. Histologically, the stomach was glandular type and mucosa is divided into three parts according to the sorts of glands they contain; cardiac, fundic, and pyloric portions. Mucosa, submucosa, muscularis, and serosa were the layers that make up the stomach wall; the thickness of every layer in the fundic part was greater than that in the cardiac and pyloric parts, simple columnar epithelium lining the mucosa, with gastric pits that open into tubular gastric glands. The mucosa's glands were shown as short, branched, coiled, tubular glands in the cardiac and pyloric regions They primarily include mucoussecreting cells with a minimal number of parietal cells. In contrast the fundic glands were simple branched tubular that were long,

and straight and had the chief cells and parietal cells, As connective tissue, the submucosa included numerous blood and lymphatic vessels, Inner and exterior smooth muscle fiber layers make up the muscularis externa, the mesothelium-based serosa. The gastric pits' surface lining cells in the cardiac glands take a positive reaction with PAS and a negative with AB; while in fundic glands and pyloric glands no response to each of PAS and AB. At one days age, the epithelium of the villi showed with a number of vacuolated columnar cells and immature cells, Villi had a slender shape; and some of there were short irregularly with intervillous space, absent of crypts in lamina propria, and muscularis mucosa not continuous, in submucosa; no Payer's patches and Brunner's glands, while there were clumps of epithelial immature cells with a pale nucleus in the villi bases, whereas at age of 10 days, the mucosa consisted of long cylindrical villi with a few scattered goblet cells and the muscularis mucosa was poorly developed and arranged in a circular layer and the results showed still of vacuolation cells and crypts start in the histogenesis. In 15 days, the vacuolation of cells subsided, while villi took on their mature shape and the crypts were obviously grown. Also to that, there were various morphometrical measurements showing developmental changes in the intestine wall at different ages. The result showed that the progress in age has a pronounced effect on the shape and length of the intestinal villi; In 40 and 90 day ages; the mucosa was composed of long cylindrical, mature villi; In the duodenum, were leaf-like, in the jejunum were conical and ileum were club- shaped. Simple columnar epithelium with goblet cells lined the tunica mucosa. The duodenal glands were serous type. on the ileum end of the adult hare was Payer's patch, the nerve plexuses in each of submucosa and muscularis in all ages. The crypts were more developed. The plicae circulars in the jejunal wall. In conclusion, the present work adds new knowledge and documented the differences in histological and histochemical structure of the development of the stomach and intestine in cape hare. and 40 day age was a critical time for development.