

THE HISTOPATHOLOGICAL STUDY OF “HORSE BONE CALCIUM” PREPARATION EFFECT ON THE ACETIC INDUCED GASTRIC ULCER MODEL

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Introduction: Calcium homeostats is: Horse bone calcium supplement contains calcium hydroxyapatite, which is in the form of complex chelates ion, gives effect of diminish gastric acid and pepsin. Calcium hydroxy-apatite is crystallizes in the hexagonal crystal system. Size of the calcium hydroxy-apatite nano particles are 105-120 nm.

Microcrystalline hydroxyapatite concentrate (MCHC) is derived from whole bone and is available as a nutritional preparation. It provides much greater nourishment than just calcium. MCHC contains protein and other ingredients that comprise the organic portion of bone, as well as calcium and other minerals in the normal physiological proportions found in raw bone.

There is no doubt that calcium is essential for healthy bone formation; however, trace minerals and organic factors are also important. Because bone is a complex, highly mineralized tissue, a number of trace mineral deficiencies can impair bone formation and remodeling. Trace minerals also act as cofactors for several enzymes involved in the production of the organic portion of bone. Because MCHC is actual bone, it contains these vital components, which are important for a healthy skeleton. It truly is comprehensive bone nourishment. No stress for gastric digestion system.

Materials and methods: The effects of the medicinal substances were investigated on “Wistar” breed of white rats. Many studies mostly experimental animal effect have been conducted in thus field. In this study, we examined gastroprotection effect of “Horse bone calcium” preparation on the gastric ulcer in rats model induced by acetic acid. The stomach exposed and 0.02 ml of 100% acetic acid was injected into the gastric wall near the antral portion of the stomach using a hamilton syringe with a 30-gauge needle. Intact animals received no surgical modifications. The abdomen was then sutured, and the animals were allowed to recover and returned to their cages with food and water ad libitum. Injection of 0.02 ml of acetic acid causes. The stomach protective process starts around day 7 and is completed in about 4 weeks.

The animals were divided into 3 groups and treated daily by gavage with “Horse bone calcium” in 1.2 ml of solvent. At the end of 4 weeks, the animals were killed and their stomachs removed, opened along the greater curvature, fixed in 10% neutral buffered formalin overnight, and photographs taken.

Results: Histopathological studies: Freshly excised stomach of one animal from each group was washed with

saline and preserved in 10% formaldehyde solution for hystopathological studies. It was processed for 12 h using isopropyl alcohol, xylene and paraffin embedded for light microscopic study. Paraffin embedded tissue section cut at 5 µm thickness were prepared and stained after deparaffination using hematoxyline and eosin stain (H and E) to verify morphological assessment of stomach damage. Photomicrographs were captured at a magnification of 10, 20 X.

“Horse bone calcium” preparation said the ulcer by reducing the epithelium and epithelial tissue of the gastric mucosa of experimental animals.

Conclusion:

1. Gastric ulcer model has been developed as pathohistological method to the experimental and control animal groups.
2. “Horse bone calcium” supplement exhibited a gastroprotective effect against gastric injury induced by acetic acid in rats.

BIOGRAPHY

B Myagmarnaran is a pharmacist, researcher of science, technology & production at Monchemo, Mongolia. She has been working at Monchemo as a researcher since 2014 when she was a bachelor's degree student of Mongolian University of Pharmaceutical Science. In 2018, She has been working as a quality control manager and researcher in treatment, research and production company of “Mong-em”. Also, she has been studying master's degree course at Mongolian University of Pharmaceutical Science since 2018.

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