Isotretinoin is chemically known as 13-cis-retinoic acid and is part of the broad group of compounds related to vitamin A. This therapy shows great efficiency in cases of severe acne and is related to the induction and control of epithelial differentiation and mucus secreting tissues. The isotretinoin pharmacological activity for this treatment is to block the secretion of sebaceous cells. The daily dose is calculated according to the patient's weight, and ranges from 0.5 to 2mg/kg/day for 16 to 35 weeks. The duodenum mucosa is made up of villi and crypts. The villi epithelium consists mostly of absorptive cells (enterocytes) and goblet cells, and arises from the crypt epithelium, which in turn contains some absorptive cells, goblet cells, enteroendocrine cells, Paneth cells and stem cells. The aim of this study is to investigate alterations in duodenal mucosa using two different dosages of isotretinoin, one of which is that suggested for humans. For this study, 20 young male Wistar rats were separated in four groups. The drug was diluted in soybean oil, and offered by gavage every day for 60 days. G1: control with water; G2: control with soybean oil; G3: 1mg/Kg of isotretinoin; G4: 5mg/Kg of isotretinoin. A volume of 2mL of solution was given to each animal. After the treatments, the animals were euthanized by application of xylazine and cetamine. Portions of the duodenum were collected and fixed with Karnovsky's fixative. Part of these samples were treated following the usual protocol for light microscopy with Hematoxilin-Eosin staining technique. Other samples were treated following the usual protocol for analyses with scanning electron microscopy. After fixation, the samples were treated with osmium tetroxide. The next step was critical point drying, followed by gold sputter coating. The analysis of the both samples from the control groups (G1 and G2) showed a perfect mucosa, with the expected structure. The villi are in contact with the lumen and the crypts at the base of the villi. The connective tissue supporting the villi, and containing lymphatic vessels and blood vessels can be observed with no alterations. Just below the crypts, a connective tissue layer and a muscular layer were defined. This last structure has an internal circular muscle layer and an external longitudinal muscle layer. The villi and the crypts could be clearly defined. In the treated groups (G3 and G4), modifications were not found compared with the control group (Figure 1). This result suggests that the treatment proposed does not cause modifications in the general structure of the duodenum mucosa. Further evaluation is needed for more complete conclusions.

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Fig. 1: Duodenal mucosa. a, b, e, f: Scanning Electron Microscopy.; c, d, g, h: Light Microscopy, Hematoxilin-Eosin staining. G1: control with water; G2: control with soybean oil; G3: 1mg/Kg; G4: 5mg/Kg. V: villi; C: crypt; T: connective tissue; M: muscular layer. Bar: 100µm.