Isotretinoin or 13-cis-retinoic acid 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 is part of the broad group of compounds related to vitamin A and its pharmacological activity for the treatment is to reducing the activity of sebaceous glands. The suggested dosage for humans is 0.5 to 2mg/kg/day for 4 to 8 months. The substance is absorbed in the small intestine and the duodenum is the first segment of this organ. The duodenum structure 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: 10mg/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. The samples were treated following the usual protocol for analyses with light microscopy. To observe structure, Hematoxilin-Eosin staining was used, as well as the following cytochemical techniques: Reticulin, Masson’s trichrome and Alcian Blue-PAS combination. The analysis of the samples showed a perfect mucosa, with the expected structure. Hematoxilin-Eosin stain showed villi and crypt structure with the villi in contact with the lumen and the crypts at the villi’s base. In the Masson’s trichrome sample, the connective tissue can be observed supporting the villi, and containing lymphatic vessels and blood vessels. Just below the crypts, a connective tissue layer and a muscular layer were defined. With Reticulin samples, the reticulin fibers can be observed providing support for the structures. The Alcian Blue-PAS combination technique, demonstrated goblet cells in all of the absorptive tissue, more concentrated in the crypt in relation to the villi. All of these techniques showed that in the treated groups (G3 and G4), no alterations were found compared to the control groups (G1 and G2) (Figure 1). This result suggests that the treatment proposed does not cause modifications in the general structure of the duodenal mucosa. Further evaluation is needed for more complete conclusions.

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Fig. 1: Duodenal mucosa structure using light microscopy. G1: control with water; G2: control with soybean oil; G3: 1mg/Kg; G4: 10mg/Kg. a: Hematoxilin-Eosin staining; b: Reticulin technique; c: Masson's trichrome; d: Alcian Blue-PAS combination. V: villi; C: crypt; M: muscular layer; *: connective tissue. Bar: 50µm.