

عنوان مقاله:

Evaluation of the Effects of Amoxicillin on Tooth Development in Rats by Histological and Histomorphometric Study

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خلاصه مقاله:

Amoxicillin is one of the most commonly prescribed antibiotics in children. As a result, it is prescribed as the first line of defence against cutaneous, gastrointestinal, and respiratory infections. The objective of this study was to evaluate the effects of Amoxicillin on the formation of dentin and enamel during the secretory and early phases of mineralization. Regarding the materials and methods used to perform this study, ۱۶ pregnant adult Wistar rats were equally divided into two groups. The first group did not receive the drug and was prescribed a saline solution (control group), and the other group received ۲۵۰ mg/kg/day of Amoxicillin (experimental group). From the ۱۳th gestational day until delivery, the treatment was given every day by oral gavage. After birth, the newborns also received the same treatment as their mothers from the first day until ۷ or ۱۲ days after birth. The newborns were sacrificed at ۷ and ۱۲ days postnatally, the jaws were dissected, the maxilla was taken, the samples were fixed in ۱۰% formaldehyde solution, and the upper first molars were analyzed histologically by H & E stain and histomorphometrically by image J to examine the enamel, dentin, ameloblast and odontoblast mean thickness in both groups and each healing periods. The study's results showed that the mean enamel, as well as ameloblastic and odontoblastic layer thickness, were significantly different in the Amoxicillin ۲۵۰ mg/kg group, compared to the control group. The result also revealed a non-significant group difference in the dentin thickness in both durations (P-value at day ۷=۰.۱۴۷ and the P-value at day ۱۲=۰.۰۵۴). Vacuolization of the ameloblastic and odontoblastic layers was observed in the Amoxicillin-treated group in both durations.

کلمات کلیدی:

Amoxicillin, Enamel, Dentin, vacuolization, ameloblast

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