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Protective Effect of Adenosine Triphosphate Against Bevacizumab-Induced Mandibular Bone Damage in Rats

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SUMMARY. **Bevacizumab is the anticancer drug used as an anti-angiogenic inhibitor of vascular endothelial growth factor (VEGF)-A. Bevacizumab causes toxicity by decreasing adenosine triphosphate (ATP) and increasing through reactive oxygen species (ROS) production. Male Albino Wistar rats were divided into 3 groups healthy (HG), bevacizumab administered (BVZ) and ATP+bevacizumab administered (ATP+BVZ). In the ATP+BVZ group, 25mg/kg ATP was injected between the mandibular gingiva and the bone. One hour after the application, 10 mg/kg bevacizumab was administrated intraperitoneally to the ATP+BVZ and BVZ groups. Two doses of bevacizumab were administered on the 1st and 15th days. ATP administration was continued once a day for 30 days. intoATP significantly prevented the increase in malondialdehyde (MDA) and total oxidant status (TOS) levels and the decrease in total glutathione (tGSH) and total antioxidant status (TAS) levels in the mandible bone tissue. ATP alleviated the histopathological damage associated with bevacizumab.**

RESUMEN. Bevacizumab es el fármaco contra el cáncer que se utiliza como inhibidor antiangiogénico del factor de crecimiento endotelial vascular (VEGF)-A. Bevacizumab causa toxicidad al disminuir el trifosfato de adenosina (ATP) y aumentar a través de la producción de especies reactivas de oxígeno (ROS). Se dividieron ratas macho Albino Wistar en 3 grupos sanos (HG), administrados con bevacizumab (BVZ) y administrados con ATP+bevacizumab (ATP+BVZ). En el grupo ATP+BVZ, se inyectaron 25 mg/kg de ATP entre la encía mandibular y el hueso. Una hora después de la aplicación, se administró bevacizumab 10 mg/kg por vía intraperitoneal a los grupos ATP+BVZ y BVZ. Se administraron dos dosis de bevacizumab los días 1 y 15. La administración de ATP se continuó una vez al día durante 30 días. intoATP evitó significativamente el aumento de los niveles de malondialdehído (MDA) y estado oxidante total (TOS) y la disminución de los niveles de glutatión total (tGSH) y estado antioxidante total (TAS) en el tejido óseo de la mandíbula. ATP alivió el daño histopatológico asociado con bevacizumab.

KEY WORDS: ATP. Bevacizumab. Mandible. Oxidative stress.

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