THE INFLUENCE OF ADD-ON MAGNESIUM THERAPY ON ARTERIAL BLOOD GAS CONTENT IN TRAMADOL-TREATED RATS

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Tramadol is a widely used analgesic, which is known to cause respiratory depression, particularly after repeated administration. The aim of the study was to determine whether acute or chronic add-on magnesium lactate (Mg) would influence the arterial blood gas content, taken as an index ventilatory changes in tramadol-treated rats. The study was performed in pharmacologically pretreated rats. The animals received tramadol alone or tramadol + Mg. The blood was then drawn under anesthesia for gas content measurements after 1, 7, and 14 days. We found that tramadol alone led to increased PaCO2 and decreased PaO2 in all timeframes of the study, which confirms the drug's depressant ventilatory effect. Add-on Mg failed to improve the worsening of blood gases in the short- and middle-term, but it did improve the situation; the blood gases reverted to the normal level.

We conclude that a prolonged add-on Mg therapy for at least 14-day may prevent the development of ventilatory depression caused by tramadol. This finding optimizes the therapeutic use of opiate-like pain relievers.

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