



**4th International Congress of
Turkish Neuroendocrinology
Society | ISTANBUL**

**26 | 28
November
2020**



Effects of Levetiracetam on Contraction of Myometrium in Rats

**Munevver Gizem Hekim¹, Ihsan
Serhatlioglu², Emine Kacar¹**

¹Firat University, Faculty of Medicine, Department of Physiology, Elazig, Turkey

²Firat University, Faculty of Medicine, Department of Biophysics, Elazig, Turkey

Poster # PC41



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



AIM: Levetiracetam is a second generation antiepileptic drug. Levetiracetam inhibits the release of calcium from intracellular stores in the neuronal cell. Although the pregnancy category is in C, its effectiveness on uterine contractility has not been studied before. In our study, we aimed to investigate the possible efficacy of levetiracetam on uterine contractile activity in non-pregnant rats

METHODS: Rats were used in Sprague-Dawley intact diestrus period. Uteruses were prepared and placed in an isolated tissue bath. Spontaneous contractions were expected to decrease. Then, at 60 min intervals, 20 μ M and 40 μ M of levetiracetam was applied to isolated organ bath chambers. It was followed for 30 minutes. Ca-free Krebs solution was applied to determine the cellular mechanism by which the change in uterine activity occurred. Then, spontaneous contractions were waited to end. After spontaneous contractions ended, 40 μ M of levetiracetam was applied to isolated organ bath chambers. The area, peak-to-peak (p-p) and frequency values of uterine contractions were analyzed before and after administration of levetiracetam. The data obtained from the analysis were evaluated using the Paired T-Test in the SPSS 21.0 Statistics Software.



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020

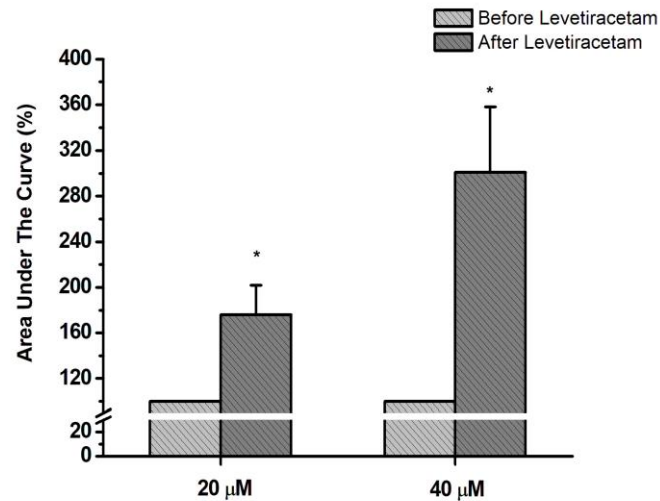
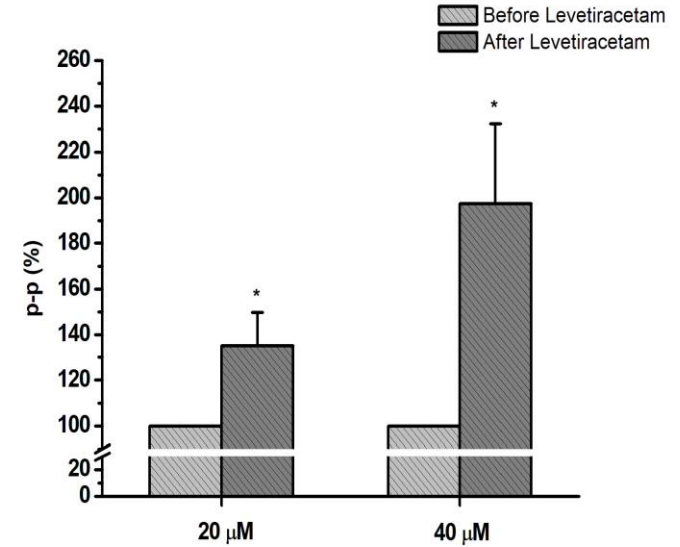
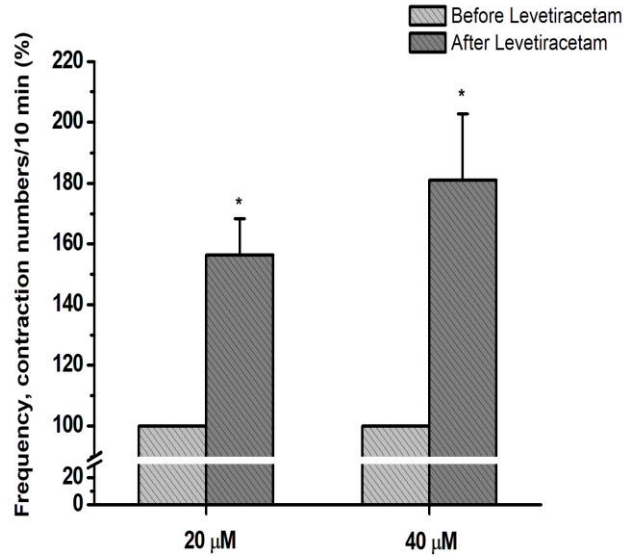


RESULTS: After levetiracetam spontaneous contractions decreased, there was a statistically significant increase in p-p, area and frequency of contractions after administration of 20 μ M and 40 μ M doses ($p < 0.05$). The increase in p-p, area, frequency values after application at 20 μ M dose was higher compared to 40 μ M dose ($p < 0,05$). The same application was performed with the Ca free solution we used to explain the cellular mechanism of this increase. However, the same activity was not observed.



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020





4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



CONCLUSION: As a result of our study, it was shown that levetiracetam application has an activator effect on uterine contractions. It is thought that this activity of levetiracetam is by increasing extracellular calcium passage into the cell.