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Poster Presentation

Cardiotropic Activity of 4,6-Diaryl-5-nitro-3,4-dihydropyrimidin-(1*H*)-2-ones

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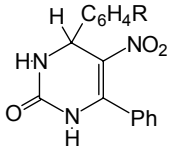
Recently, we have found enhanced antiarrhythmic activity of 4,6-diaryl-5-nitro-3,4-dihydropyrimidin-(1*H*)-2-ones **Ia-c** toward two different types of rat arrhythmia [1,2].



Ia-e R = H (**a**), 4-OH (**b**), 3-F (**c**), 3-NO_2 (**d**), 3-aza (**e**)

In the present work a broader series of low-toxic 4-aryl-5-nitrodihydropyrimidinones **Ia-e** was tested with rats for both antiarrhythmic and hypotensive activities. Antiarrhythmic properties were studied by a standard method using $CaCl_2$ introduced in the dose of 250 mg / kg (which corresponds to LD_{100}) on a background of a tested compounds. Hypotensive properties were investigated using pressure increase model with adrenaline introduced in the dose of 0.003 mg / 200 g.

The minimal antiarrhythmic-active initial doses of the studied compounds were determined under condition that all tested rats were survived. The largest effect was observed for **Id** ($4.5 \cdot 10^{-5}$ mg / kg) and **Ib** ($3.5 \cdot 10^{-4}$ mg / kg) derivatives, with the antiarrhythmic activity reduces in the whole series as follows: **Id > Ib > Ia**, **Ic > Ie**.

According to preliminary data, **Id** ($4.5 \cdot 10^{-5}$ mg / kg) and **Ib** ($3.5 \cdot 10^{-4}$ mg / kg) derivatives do not affect arterial pressure of intact rats. At the same time, the **Ic** derivative at the level of 3.5 mg / kg has removed, during 1 min, the adrenaline-induced hypertension, normalizing arterial pressure from 230 to 130 mmHg in a systole, and from 130 to 90 mmHg in a diastole.

[1] Voevoda, T.V., Tolstikova, T.G.; Sedova V.F., Shkurko O.P., Tolstikov G.A. *Dokl. Akad. Nauk*, 2001, v. **379**, p. 261.

[2] Sedova V.F., Voevoda, T.V., Tolstikova, T.G.; Shkurko O.P. *Chem.-Pharm. Zh.,* 2002, (6), p. 4.