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INVESTIGATION OF DOXAZOSIN IN THE ROTTING BIOLOGICAL MATERIAL

Doxazosin is a postsynaptic – adrenoreceptor antagonist. It used for treat high blood pressure and urinary relation associated with prostate hyperplasia [1,2]. This medicine in case of overdose and self treatment can break the function of heat, liver, kidneys or cause death [3]. The choice of high-sensetive methods of investigation of doxazosin in biological objects is necessary. Aim of work is the investigation of techniques of extraction and purification from impurities and quantitative determination of doxazosin in liver tissue of corpse during decay.

Materials and method. The model mixture consist of 10,0 g of liver tissue and 200,0 μg doxazosin. They were storage for 7, 14, 21 and 28 days at temperature 5 °C. In parallel, a control experiment was carried out. Extraction out of biological material was performed in several stages – centrifugation, the protein fraction was precipitated by ethanol (96%), acidified with oxalic acid, extraction of impurities with hexane, and thin layer chromatography (TLC)[4].

Hexane purification was performed at pH 2,0 after drying the extract of the liver tissue and dissolving the dry residue in 0,1M hydrochloric acid.

TLC-purification was performed at conditions: stationary phase – Sorbfil, mobile phase – chloroform-acetone (80:20), reagent for the detection of doxazosin – Dragendorff reagent as modified by Mounier (sensitivity of reagent -1,0 μg in the samples); *Rf* doxazosin = 0,54-0,56, impurities – at the starting line and finishing line [5]. TLC – identification of doxazosin in extracts of liver tissue is performed on the results of the reactions (Tab.).

Table

Results of doxazosin identification by TLC – method (n = 5)

Reagent for the detection	Color spots	Extracts of liver tissue
UV- light (λ = 254 nm)	violet	+
Dragendorff reagent as modified by Mounier	orange	+
Iodine vapor	orange	+

Note: «+» – a positive result of the reaction.

Quantitative determination was performed by UV-spectrophotometric method. Conditions: spectrophotometer SF-46, cuvette thickness of 10 mm; λ max = 250 ± 2 nm; reference solution obtained from the control experiment. Doxazosin concentration

in solution was calculated from the equation of the linear dependence of concentration (C, μg / ml) and absorbance (A) (C = 8,988 A) (Fig.)[6].

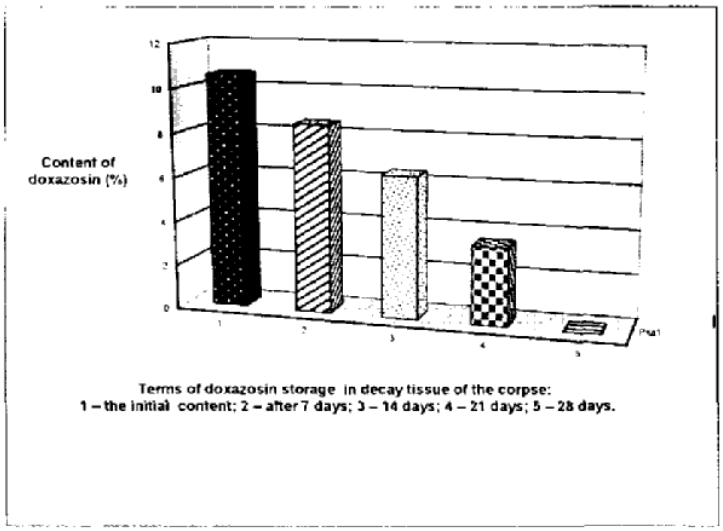

Fig. Terms of doxazosin storage in biomaterial

Results: initial content was 10,0 ± 4,8% of substance; after 21 days of storage in decay tissue of the corpse can be found 3,5%; after 28 days – doxazosin not possible to determine.

Conclusions:

We had defined terms of doxazosin storage in decay biological material. The results can be recommended for using in chemical-toxicological analysis.

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