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Morphology Changes in the Kidneys When Paclitaxel and Cisplatin Drugs are used Together in Mammary Cancer Chemotherapy

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Abstract: In Tumor Diseases, the spectrum of kidney damage is very wide and can be caused directly by tumor infiltration and the effects of tumor cell metabolites on kidney tissue, glomerular lesions, as well as nephrotoxic effects of chemotherapy drugs. In addition to the successes achieved in the treatment of Tumor Diseases, the toxicity of the treatment is a huge problem.

Keywords: cancer, conceivable, chemotherapy, sarcoma applique.

Relevance. In addition to the successes achieved in the treatment of Tumor Diseases, the toxicity of the treatment is a huge problem. Kidney damage that develops in cancer can lead to a change or increase in the concentration of drugs, which increases their toxicity, prolongs hospital stay, and increases mortality [1,3].

Chemotherapy is a special way to treat or prevent cancer using special drugs that reduce tumor cell growth[4]. Chemotherapy does not always lead to complete treatment, but significantly prolongs the patient's life and improves his condition [7].

The main goal of chemotherapy is to have a minimal harmful effect on the patient's body, but to completely destroy cancer cells [6]. The use of modern regimens, their careful choice of chemotherapeutic agents, constant supervision by a doctor and the fulfillment of all his recommendations will help the patient to conduct a course of chemotherapy more easily [2,5].

As an object of study, 18 white non-breeding female rats were applied under the conditions of a simple vivarium of 6 months.

Material and methods. As the object of the study, 18 non-white female rats were applied, which were fed in normal vivarium conditions of 6 months and suffered from breast cancer. All laboratory animals were divided into 2 groups: Group 1-healthy experimental animals under standard vivarium conditions; Group 2 - intravenous paclitaxel and cisplatin at a dose of 0.4 mg/kg were injected into cancer rats.

Research results. Group 1 control group consists of the total area of the renal tubule from 2887.31 mkm2 to 2978.58 mkm2, the average area of 2938.62 ± 37.79 mkm2, the area of the vascular glomerulus from 2554.78 mkm2 to 2611.08 mkm2, the average 2582.14 ± 26.64 mkm2 and the area of the capsule cavity from 463.27 mkm2 to 486.23 mkm2, the average is 475.34 ± 21.11 Mkm2.

The proximal CT of the rat kidney range in diameter from 35.16 µm to 38.78 µm, average 36.98 ± 0.21 µm, tube cavity diameter from 15.32 µm to 18.09 µm, average 16.24 ± 0.21 µm. This is evidenced by the high activity of reabsorption processes in rats of this age.

The distal CT of the control group of rats kidney range in diameter from 29.21 μm to 32.12 μm, with an average of 30.96 ± 0.05 μm, the diameter of the ductal cavity ranges from 16.05 μm to 17.23 μm, with an average of 16.05 ± 0.12 μm.

Group 1 received 3 rats from experimental animals. As a narcosis, it was neutralized with ether, and the experiment took samples of blood from the abdominal aorta of animals. The samples were tested for the amount of mochevina and creatinine. In doing so, mochevina displayed 3.1-5.4 mmol/l, while creatinine displayed 72.6-85.3 mkmol/L.

Group 2 cancer rats were injected with an intravenous cisplatin at a dose of 0.4 mg/kg.

In rats of the experimental group, the total area of the renal cell is on average 2264.87 mkm2 to 2447.43 mkm2, on average-2327.53 ± 33.29 mm2, 11.23% less than Group 1 of the experiment, the area of the vascular coptochase is 2109.83 mkm2 to 2243.87 mkm2, on average -2167.16 ± 22.46 mkm2, compared to Group 1 of the experiment 8.66% less and the capsule cavity area was seen to range from 348.71 mm2 to 401.59 mm2, with an average of 376.25 ± 21.13 mm2, 15.36% less than group 1 of the experiment (Figure 1).

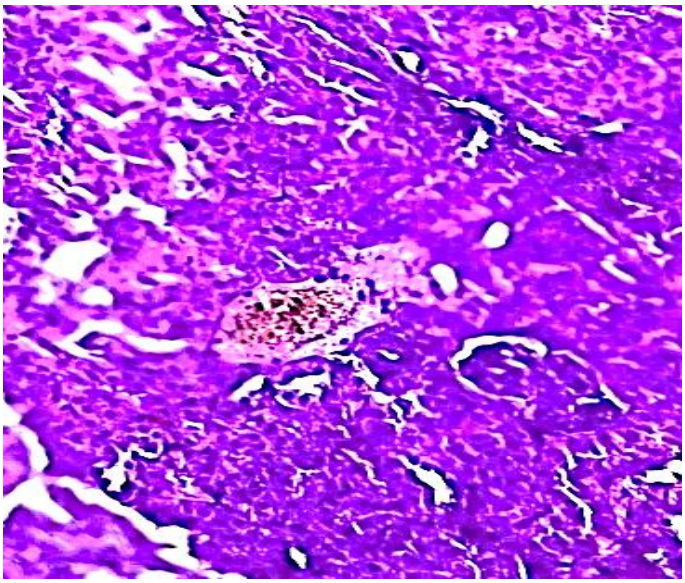

Figure 1. Group 2 of the experiment is the cortical substance of the kidney of rats 6 months old. It is stained with hematoxylin-eosin. OK 10 x AB 10. 1-glomerulus, 2-cavity of capsule , 3-proximal CT, 4-distal CT.

In Group 2 rats, the diameter of proximal CT has been found to vary from 25.17 μm to 31.52 μm, with an average of 28.44 ± 0.72 μm, 11.09% less than Group 1 of the experiment, with a proximal CT cavity diameter of 10.62 μm to 13.16 μm, with an average of-12.55 ± 3.41 μm, 16.23% less than Group 1 of the experiment reaches (Figure 1).

Rats are found to be 10.24% smaller than Group 1 of the experiment, with a distal CT diameter of 22.57 μm to 25.38 μm, with an average of 24. ± 0.39 μm, with a distal CT cavity diameter of 9.12 μm to 11.69 μm, with an average of 10.62 ± 0.48 μm, 19.78% less than Group 1 of the experiment (Figure 1).

Conclusion. Showed negative effects on organometric and histomorphometric parameters of their kidneys in rat chemotherapy. This was due to a decrease in the size of the vascular ball and capsule cavity area, as well as proximal and distal CT and their cavity diameters, compared to the linear dimensions and integral values of their kidneys, compared to the indicators of Group 1 of the experiment.

In addition, in the photo, blood traces were seen on the structure of the kidneys, nephron vascular ball fullness and filtrant content.

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