



THE THERAPEUTIC IMPACT OF QUERCITINE ON CISPLATIN-INDUCED HEPATIC LESIONS IN RATS

SAVICI J., MUSELIN F., MARC S., BOLDURA O.M., BREZOVAN D.

University of Life Sciences "King Mihai I" from Timișoara, Faculty of Veterinary Medicine, 300645, Calea Aradului No. 119, Timișoara, Romania

Abstract: *Cisplatin is used in chemotherapy, although with serious side effects. In an attempt to reduce the liver toxicity of cisplatin, quercetin was used for 6 weeks. Histological sections of the liver were used to show structural changes in hepatocytes. Cisplatin administration for 6 weeks resulted in degenerative phenomena in the liver. In the group given cisplatin with quercetin, the liver architecture is almost normal. The hepatocytes lesions are reduced, almost absent, blood vessels of normal appearance and diameter.*

• **Materials and methods**

The study was performed on 21 adult white mice obtained from the Biobank of the University of Medicine and Pharmacy Victor Babes Timisoara.

Group I - Control group (injected with 1 ml of saline i.p.), distilled water ad libitum,

Group II (E1) - injected i.p. with 20 mg/kg cisplatin,

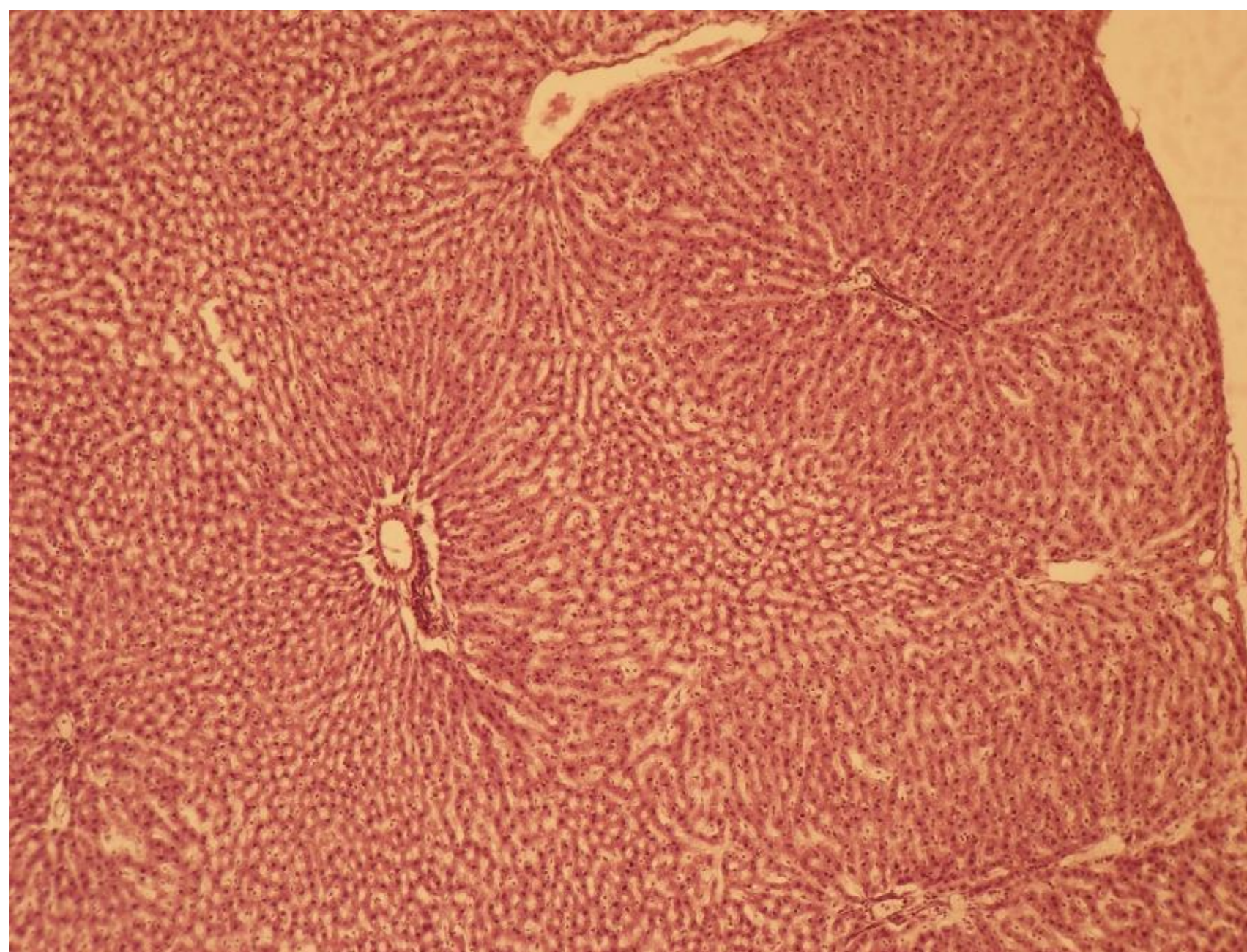
Group III (E2) - injected i.p. with 20 mg/kg cisplatin and quercetin 500 mg/L.

Cisplatin and quercetin were administered once a week for 6 weeks.

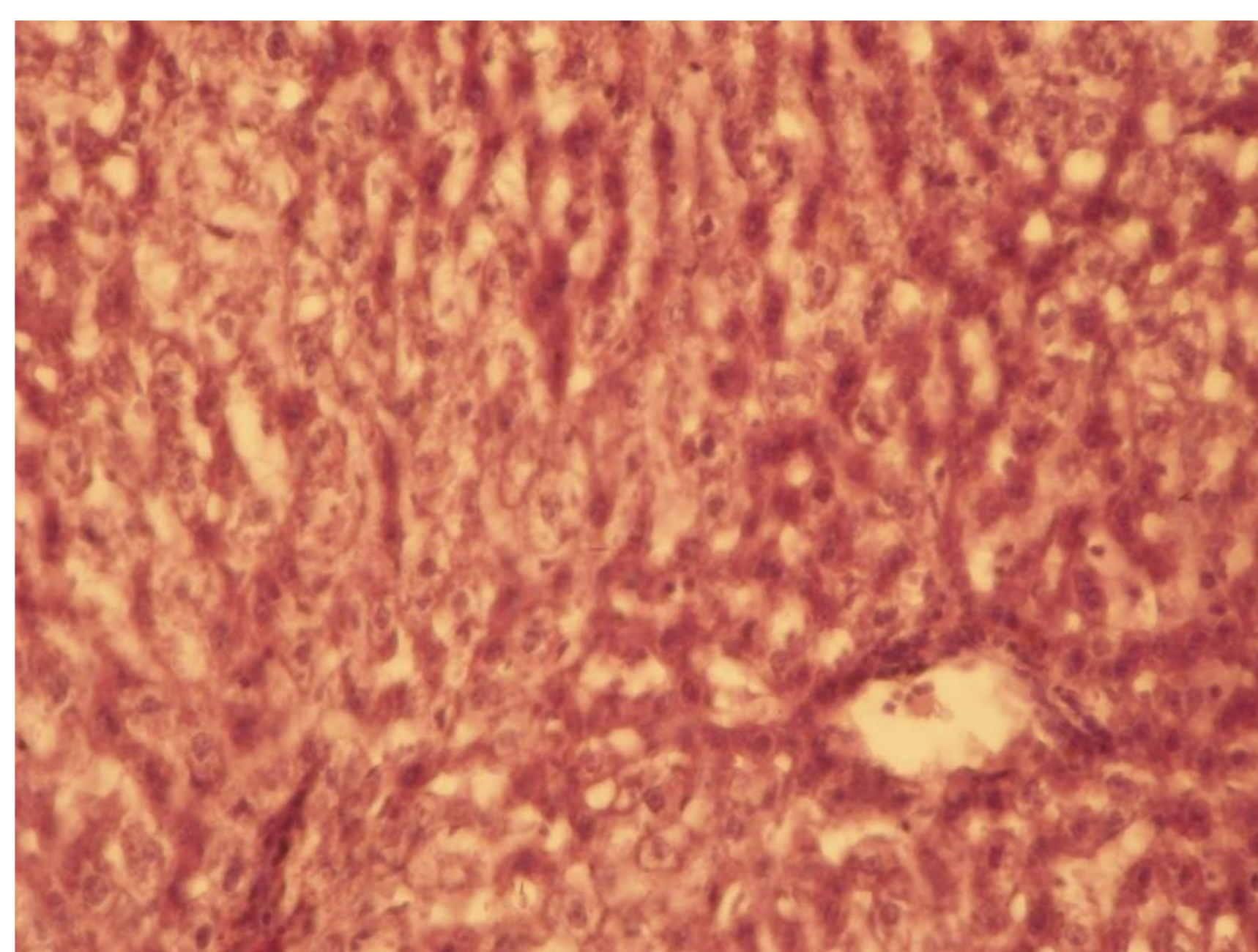
For histological examination, liver samples were collected after administration of anesthesia (Ketamine + Xylazine) and processed by paraffin embedding. Following sectioning they were stained with haematoxylin-eosin method and examined with Olympus CX41 microscope with QuickPHOTO Micro 2.2 software.

The experimental protocol was approved by the Ethics Committee of the University of Agricultural Sciences and Veterinary Medicine of Banat "Regele Mihai I of Romania" in Timișoara No. 136/2021

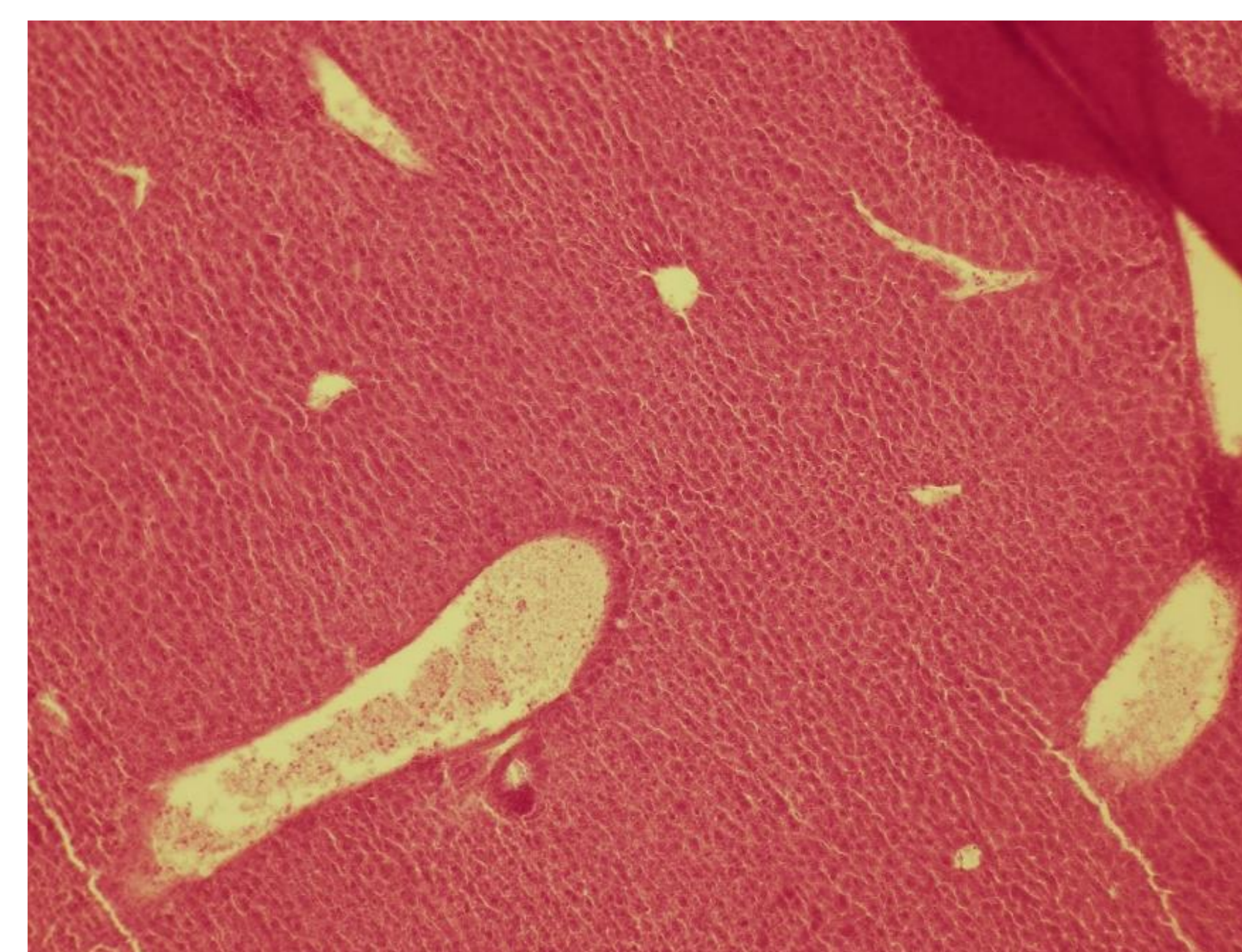
Results and discussions



Liver - control: normal appearance, H.E. stain, ob. 10X



Liver - E1 group: vacuolar hepatocytes with pyknotic nuclei, H.E. stain, ob. 10X



Liver - E1 group, vascular dilations, H.E. stain, ob. 10X

• **Conclusions**

Cisplatin administration for six weeks also resulted in degenerative liver phenomena.

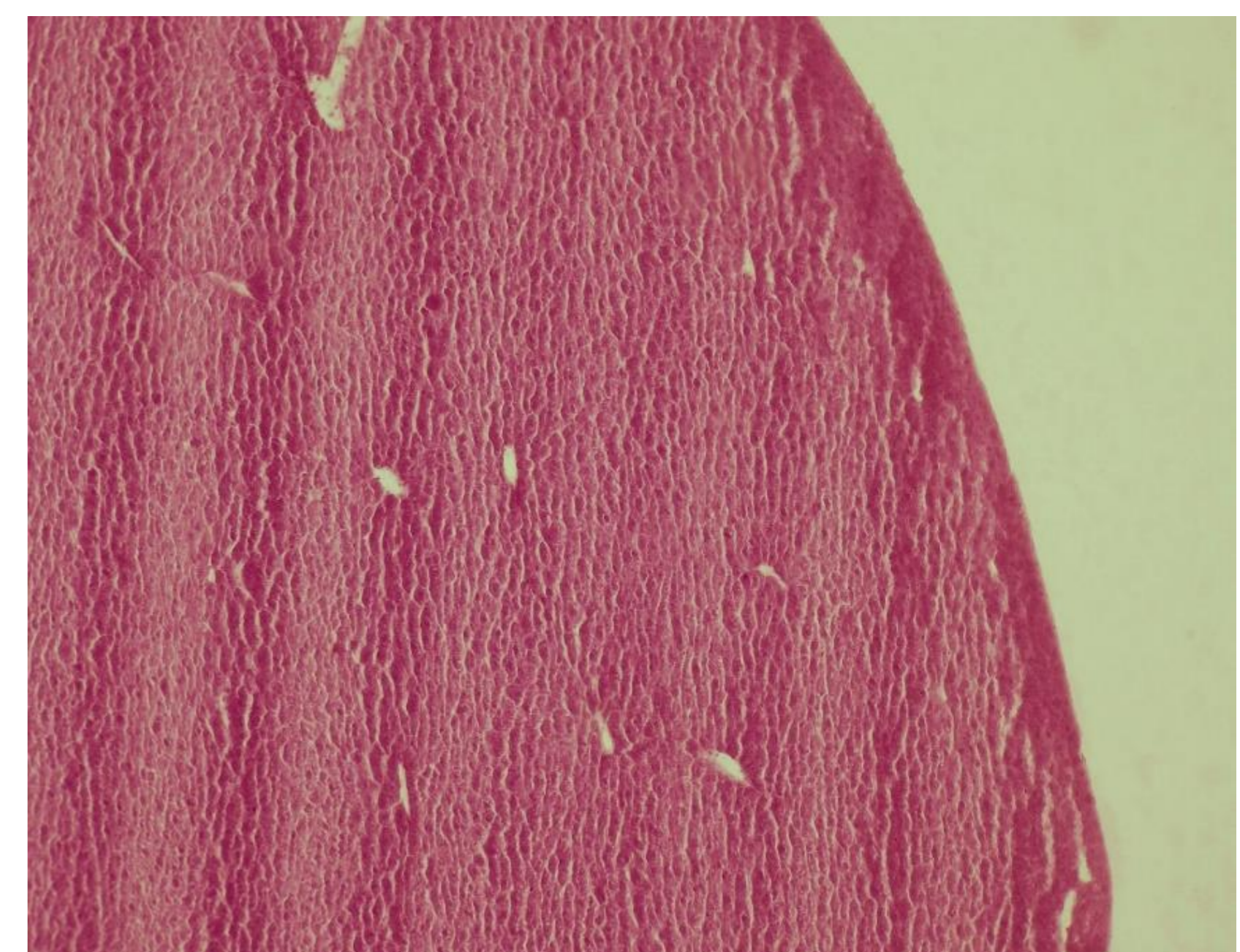
extended to the blood vessels, with ectasia and vascular congestion.

In the group administered cisplatin concomitantly with quercetin, the liver architecture is almost normal. The lesions described in the hepatocytes are reduced, almost absent, blood vessels with normal appearance and diameter.

Negative effects of cisplatin administration on the liver, which may occur during antitumour therapies, can be significantly reduced by the combined use of quercetin.



Liver - E2 group, a. central vein, b. cords of hepatocytes, H.E. stain, ob. 40X



Liver - E2 group, blood vessels of normal caliber, H.E. stain, ob. 10X