Table 1 – Morphometric and histopathological assessment of the heart

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parametrs | Scores | Control group of young male rats  (n = 3) | Control group of old male rats without treatment  (n = 3) | Empty exosomes from mare's milk (n=3) | Exosomes from mare's milk with loaded quercetin  (n = 3) | Quercetin  (n = 3) |
| *Нematoxylin and eosin staining* | | | | | | |
| Cardiomyocyte hypertrophy \* | 0 | 100% (3/3) | - | - | 33% (1/3) | - |
| 1 | - | 100% (3/3) | 100% (3/3) | 66% (2/3) | 100% (3/3) |
|  |  |  |  |  |  |  |
| Focal hypereosinophilia \* | 0 | 100% (3/3) | - | 33% (1/3) | 66% (2/3) | 66% (2/3) |
| 1 | - | 100% (3/3) | 66% (2/3) | 33% (1/3) | 33% (1/3) |
|  |  |  |  |  |  |  |
| Increased size of cardiomyocyte nuclei/appearance of multinucleated cardiomyocytes \* | 0 | 100% (3/3) | - | 33% (1/3) | 66% (2/3) | 66% (2/3) |
| 1 | - | 100% (3/3) | 66% (2/3) | 33% (1/3) | 33% (1/3) |
|  |  |  |  |  |  |  |
| Cellular infiltrate \* | 0 | 100% (3/3) | 66% (2/3) | 66% (2/3) | 66% (2/3) | 100% (3/3) |
| 1 | - | 33% (1/3) | 33% (1/3) | 33% (1/3) | - |
|  |  |  |  |  |  |  |
| *Masson’s trichrome staining* | | | | | | |
| Atherosclerosis \* | 0 | 100% (3/3) | - | - | - | - |
| 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
|  |  |  |  |  |  |  |
| Perivascular fibrosis \*\* | 0 | 100% (3/3) | - | - | - | - |
| 1 | - | 33% (1/3) | 33% (1/3) | 33% (1/3) | 33% (1/3) |
| 2 | - | 66% (2/3) | 66% (2/3) | 66% (2/3) | 66% (2/3) |
| 3 | - | - | - | - | - |
| 4 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Interstitial fibrosis \*\* | 0 | 100%(3/3) | - | - | - | - |
| 1 | - | - | - | - | - |
| 2 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
| \* - «0» - absent, «1» - present;  \*\* - «0» - no change, «1» - minimal changes, «2» - light changes, «3» - moderate changes, «4» - severe changes | | | | | | |

Table 2–Morphometric and histopathological assessment of the kidney

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parametrs | Scores | Control group of young male rats  (n = 3) | Control group of old male rats without treatment  (n = 3) | Empty exosomes from mare's milk (n=3) | Exosomes from mare's milk with loaded quercetin  (n = 3) | Quercetin  (n = 3) |
| *Нematoxylin and eosin staining* | | | | | | |
| Vacuolization of the epithelium | 0 | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
| 1 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Hyperplasia of tubular epithelial cells | 0 | 100% (3/3) | - | - | 33% (1/3) | 33% (1/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 66% (2/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Formation of protein casts in tubules | 0 | 100% (3/3) | - | - | - | 33% (1/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Cellular infiltrate in the interstitium | 0 | 100% (3/3) | - | - | 33% (1/3) | 66% (2/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 66% (2/3) | 33% (1/3) |
|  |  |  |  |  |  |  |
| *Masson’s trichrome staining* | | | | | | |
| Thickening and fiberization of basement membranes | 0 | 100% (3/3) | - | - | 33% (1/3) | 33% (1/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 66% (2/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Hyaline glomerulopathy | 0 | 100% (3/3) | 33% (1/3) | 33% (1/3) | 33% (1/3) | 66% (2/3) |
|  | 1 | - | 66% (2/3) | 66% (2/3) | 66% (2/3) | 33% (1/3) |
|  |  |  |  |  |  |  |
| Glomerulosclerosis | 0 | 100% (3/3) | - | - | - | - |
|  | 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
| «0» - absence , «1» - presence | | | | | | |

Table 3 – Morphometric and histopathological assessment of the liver

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parametrs | Scores | Control group of young male rats  (n = 3) | Control group of old male rats without treatment  (n = 3) | Empty exosomes from mare's milk (n=3) | Exosomes from mare's milk with loaded quercetin  (n = 3) | Quercetin  (n = 3) |
| *Нematoxylin and eosin staining* | | | | | | |
| Vacuolization of hepatocytes\* | 0 | 100% (3/3) | - | - | - | 33% (1/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Karyocytomegaly and/or multinucleated hepatocytes \* | 0 | 100% (3/3) | 33% (1/3) | 33% (1/3) | 33% (1/3) | 33% (1/3) |
| 1 | - | 66% (2/3) | 66% (2/3) | 66% (2/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Central venous stasis \* | 0 |  | - | - | - | - |
| 1 |  | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
|  |  |  |  |  |  |  |
| Cellular infiltrate \* | 0 | 100% (3/3) | - | - | - | 33% (1/3) |
| 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| *Masson’s trichrome staining* | | | | | | |
| Bile duct hyperplasia/cysts \* | 0 | 100% (3/3) | - | 33% (1/3) | - | 33% (1/3) |
| 1 | - | 100% (3/3) | 66% (2/3) | 100% (3/3) | 66% (2/3) |
|  |  |  |  |  |  |  |
| Periportal fibrosis \* | 0 | 100% (3/3) | - | - | - | - |
|  | 1 | - | 100% (3/3) | 100% (3/3) | 100% (3/3) | 100% (3/3) |
|  |  |  |  |  |  |  |
| Glycogen accumulation \*\* | 0 | - | 100% (3/3) | 66% (2/3) | 66% (2/3) | 100% (3/3) |
|  | 1 | - | - | - | 33% (1/3) | - |
|  | 2 | - | - | 33% (1/3) | - | - |
|  | 3 | 100% (3/3) | - | - | - | - |
| \* - «0» - absent, «1» - present;  \*\* - «0» - less than 10%, «1» - 11-30%, «2» - 31-60%, «3» - more than 61%. | | | | | | |