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EXCHANDE OF PROTEINCARBOHYDRATE COMPLEXES IN SERUM BLOOD AND SYNOVIAL FLUID UNDER DIFFERENT METHODS OF TREATMENT ASEPTIC ARTHRITIS IN HORSES

Results highlight features of exchange of protein containing compounds in serum and synovial fluid at various treatments of aseptic arthritis in horses. In comparative aspect the efficacy of intraarticular injections of various medicinal compounds containing anesthetic and antiinflammatory components is studied. It was found that the use of Movalis in combination with trifuzolom promotes rapid exchange recovery seromucoid sialic acids in serum and synovial fluid in comparison with diprospanom.

Keywords: *serum, synovial fluid glycoproteins serohlyukoyidy, sialic acid.*

Statement of the problem. Vuhlevodutrymuyuchi protein serum levels offered in the literature sufficiently. These biopolymers refer to the vast class of compounds which assessment is carried out on two groups: glycoproteins and proteoglycans. They differ in the degree of strength of carbohydrate and protein parts of macromolecules. Thus, the glycoproteins owned most of the proteins secreted by cells and plasma proteins. Most proteins are located outside the cell or fuktsionuyuchyh are glycoproteins. They perform in humans and animals different functions and are present in all classes of proteins.

In order to determine the diagnostic vuhlevodutrymuyuchyh proteins produced by one of the Incoming their composition components such as hexose or sialic (neuraminic) acid and to assess the total number of glycoproteins. The last test to a large degree characterized by the development of reactive (acute inflammation, chronic - in the acute stage) or reparative processes in the connective tissue. They are markers of various injuries of joints, so determining the concentration of sialic acids with different methods of treatment of animals in our opinion, may answer their effectiveness.

Purpose of research: definition of exchange bilkovovuhlevodnyh compounds in serum and synovial fluid in different treatments aseptic arthritis in horses.

Material and methods studies. The study was conducted in a laboratory of the department of surgery and diseases of small animals LNAU, Regional Veterinary Laboratory, based on stud farms Luhansk and Sumy regions. Material for morphological and biochemical studies served as whole blood, serum and synovial fluid taken by puncture of the dorsal joint inversion tarsalnoho in bezporidnyh horses (12 goals). Experiments were carried out in compliance with bioethics.

Treatment of horses first (n -12) controls carried out intra-injection 2.4 ml diprospan (Betamethasone) (betamethasone dipropionate - 6.43 mg betamethasone sodium phosphate - 2.63 mg / ml) supplemented with 2% th lidocaine at a dose of 5 ml with an interval of 48 hours to complete recovery (only 2-3 injections);

- Animals of the experimental group (n - 15) was injected into the joint cavity 2-2.5 ml meloxicam (10 mg / ml) in 2% solution of lidocaine with the addition of 2 ml of 2.5% solution tryfuzolu at intervals of 48 hours, to recovery, only 2-3 injections.

In synovial fluid and serum total protein content was determined - in biurotoviy reaction using reagents produced by Simko Lviv content hexose conjugate with proteins, glycoproteins and glycosaminoglycans hexoses in ortsynovomu test method for fractional IV Neverova and I. N.Tytarenko (1979), hexoses hlornorozchynnyh hlikoproeyiniv for A.B.Lazorenko (2008), seromucoid - using fosfornovolframovoyi acid hondroyitynsulfativ - in rivanolovomu test sialic acid from vinegar-sulfate reagent according to the method Hesa (1957) .

Studies. We found that the concentration of sialic acid in serum in aseptic synovitis compared with clinically healthy animals increased more than twofold (from 89,17 ± 5,82 to 184,3 ± 10,42 Did Hesa), whereas in the synovial fluid, this figure rose to 7.8 times the rate in clinically healthy horses, indicating their important role in the course of inflammatory response in joints (Table 1).

1. Changes in the concentration of sialic acids (from Hesa) and seromucoid (mmol / l) in serum with different methods of treatment of horses with aseptic arthritis

Therapies to treat	clinically healthy	sixth day treatment	6- th day of treatment	11 th day of treatment
Diprospan	89,17±5,82	184,3±10,42	172,5±6,3	121,7±3,7**
	2,19±0,14	3,15±0,18	2,87±0,1	2,73±0,08
Movalis + tryfuzol	89,17±5,82	184,3±10,42**	131,8±4,5**	107,5±5,7***
	2,19±0,14	3,15±0,18*	2,97±0,12	2,45±0,13

Note: The numerator - sialic acid-seromucoid denominator; * P <0.05, ** p <0.01, *** - p <0.001 relative to the norm.

2. Changes in the concentration of sialic acids (from Hesa) and seromucoid (mmol / l) in synovial fluid with different methods of treatment of horses with aseptic arthritis.

Therapies to treat	clinically healthy	sixth day treatment	6- th day of treatment	11- th day of treatment
Diprospan	11,67±1,05	91,66±4,27***	54,39±2,9**	28,4±0,9***
	7,43±0,53	34,54±3,09**	20,46±1,8**	10,65±0,75**
Movalis + tryfuzol	11,67±1,05	91,66±4,27***	45,7±2,35**	20,38±1,2***
	7,43±0,53	34,54±3,09***	16,99±1,6**	9,59±0,7**

Note: The numerator - sialic acid-seromucoid denominator; P <0.05, ** p <0.01, *** - p <0.001 relative to the norm.

When analyzing the ratio of sialic acids contained in the serum to synovial fluid we observed that in clinically healthy animals it is 7,6:1, whereas in infected animals, it is 2,1:1, confirming their role in the inflammatory process of joint.

Table 1.2 The analysis notes that the intra hormones to treat sick animals goes a gradual decrease in the concentration of sialic acid in serum and in synovial fluid. But if the serum on the 6th day of treatment, their number decreased by 6.8%, in synovial fluid already in 40.7%, while the ratio of 3,4:1, indicating that the expression of a local anti-inflammatory effect diprospan. Similar dynamics we observed on the further course of the pathological process. So, on the 11th day of treatment the number of sialic acids in serum reached 121,7 ± 3,7 od.Hesa, which is 13.5% more than in clinically healthy animals.

In marked synovial fluid index was 28,4 ± 0,9 m. Hesa at 11,67 ± 1,05 in clinically healthy animals, indicating the continued destruction mezhklitynnoho matrix in the joint. The ratio of sialic acids in the test liquid for this period was 4,3:1.

More dynamic changes in metabolism of sialic acid in acute aseptic synovitis in horses has been observed in intra NSAIDs MOVALIS in conjunction with the preparation of antioxidant tryfuzolom. So, on the sixth day of treatment in reducing serum concentration was celebrated at 131,8 ± 4,5 m. Hesa, which is 40.7 units. Hesa less than using diprospan. Similar dynamics was recorded in the synovial fluid. Thus, the number of sialic acids from the previous rate decreased by almost 46 units. Hesa (p <0.001).

On the 11th day monitoring the concentration of sialic acid in serum was at 107,5 ± 5,7 m. Hesa and in synovial fluid 20,38 ± 1,2, with a ratio of 5,35:1 performance.

Similar changes in the treatment of a variety of methods we noted in exchange serohlyukoyidiv. But if the serum on the 6th day and further treatment was observed nonsignificant decrease in the concentration serohlyukoyidiv from 3,15 ± 0,18 to 2,87 ± 0.19 in the sixth and 2,73 ± 0,17 mmol / l 11dobu, in synovial fluid proteoglycan metabolism was much more striking. First, it should be noted that the number serohlyukoyidiv in clinically healthy horses reyestuvalasya in synoviyi 3.4 times higher than in serum. And in the course of acute aseptic inflammation is already equal to the ratio of 1:11 (3,15 ± 0,18 in serum and 34,54 ± 3,09 mmol / l - in synoviyi). In providing medical care dyprospamom of sialoproteyiniv decreased by the sixth day almost twice (to 20, 46 ± 1,8), and on the 11th day to 10,65 ± 0,75 mmol / l ($p < 0.05$) and the ratio of serum to synoviyi was 1:7,1 and 1:3,9 respectively.

Using non-steroidal anti-inflammatory drug in combination with MOVALIS tryfuzolom seromucoid concentration decreased, but more faster. So on the sixth day of their number stood at 16,99 ± 1,6 mmol / l, and the 11th to 9,59 ± 0,7 mmol / l (Table 2), and the ratio was at substativ 1 : 5.4 and 1.39 respectively.

Thus, it should be noted that the use MOVALIS in combination with the drug tryfuzolom promotes faster recovery of sialic acid metabolism and seromucoid in serum and synovial fluid in horses compared with diprospan.

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