

This is a refereed journal and all articles are professionally screened and reviewed

ORIGINAL ARTICLE

The Effect of Flunixin Meglumine on Serumic Levels of AST in Arab Horses before and after Exercise

¹Mashayekhi Mohammad, ²Safarmashaei Saeid

¹*Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran.*

²*Young Researchers Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran.*

Mashayekhi Mohammad, Safarmashaei Saeid; The effect of Flunixin meglumine on Serumic levels of AST in Arab Horses before and after Exercise

ABSTRACT

Flunixin meglumine is one of non steroid anti-inflammatory drugs and use for treatment of inflammatory diseases. In this study two groups (control, sub treatment) consist of 20 Arab horses were collected. Sub treatment group were injected by Flunixin meglumine with dosage of 3mg/kg every 12 hours. Every two groups of these horses for 2160m were run. Blood samples after and before the exercise were collected. Serum levels of AST in two groups before and after the exercise were determined and a significant different between two groups of these Arab horses were observed.

Key words: Flunixin meglumine, AST, Arab Horses, Exercise.

Introduction

Flunixin meglumine is an importance member of NSAIDs[1]. In horses during exercise may show muscle and joint ruptures, therefore from these drugs (for example flunixin meglumine) for decrease the inflammation of these ruptures will be used. This group of anti-inflammatory drugs has anti-inflammatory and analgesia role more than other drugs. So fare the effect of flunixin meglumine on exercise power of horses by standards methods has not been compared [3,11,12]. For determination the exercise power of horses must use of standard methods, seral levels examination of AST is one of these standard methods [2,3,5] for example from other methods can refer to determination of seral levels of CK, LDH, number of white blood cell and red blood cells and etc. therefore the aim of present study is to describe the serumic levels of AST in Arab horses before and after exercise for determine the role of flunixin meglumine on increase or decrease the exercise power of Arab horses. All stages

of this study in Tabriz area and laboratory examinations in laboratories of veterinary faculty of Tabriz Branch Islamic Azad University have been done.

Material and method

In present study 2 groups of Arab horses in Tabriz area (every groups consist of 20 horses) were collected and these horses were kept under standard conditions. One of these groups as control group and other group as sub treatment group were determined and secondary group for 3 consecutive days flunixin meglumine with dosage of 3mg/kg every 12 hours were injected (the therapeutic dose of drug). Every two groups of these horses for 2160m were run, after these steps blood samples from jugular vein of every 2 groups of Arab horses before and after exercise were collected and after these samples for taken the serum of them were transferred to laboratory of clinical pathology of veterinary faculty, Tabriz Branch Islamic Azad University. In end step these

Corresponding Author

Mohammad Mashayekhi, Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran.
E-mail: Mashayekhi79@yahoo.com
00989144126030

Mashayekhi@iaut.ac.ir

serum samples were used to determine the levels of AST by standard kits. The quantitative data were represented as mean±SEM and compared among the groups by one-way analysis of variance followed by Tukey post-test with SPSS version 13 was done. P<0.05 was considered significant.

Results:

The results of this study for control and sub treatment groups in following tables have been shown:

Table 1: serumic levels of AST in control group.

-		AST
Unit		U/l
Before exercise		8/9±25/9
After exercise		10/1±214/47
Mean±SEM		

Table 2: Serumic levels of AST in sub treatment group.

-		AST
Unit		U/l
Before exercise		8/9±21/3
After exercise		9/37±229/65
Mean±SEM		

done [10]. Studies on Flunixin meglumine mostly are on pharmacology effects and side effects of this drug [8]. In one study by Brida *et al* on NSAIDs drugs, indicated that Flunixin meglumine have a high inhibitory effect on COX1, this result in one study by Brita were corroborated [4,8]. In other study on effect of Flunixin meglumine on horse's blood protein, a significant different between control and sub treatment groups were observed [6]. In one study (2000) described that Flunixin meglumine causes decrease the mineral apposition rate and tissue repair in horses [7,9]. Also in most studies indicated that Flunixin meglumine for high binding rate with plasmatic proteins causes decrease the serumic levels of T3 and T4 and fall of power exercise is result of them. Serumic levels of AST in sub treatment group after exercise in comparison with control group was lesser, and a significant different between two groups of these Arab horses were observed. In fact the results of this study indicated that flunixin meglumine cases increase the power exercise of the Arab horses.

References

- Adams, 2001. Veterinary Pharmacology and Therapeutics, 7th Edition, IOWA State University Press/ Ames.
- Duncan, K.W. Prasse, K.S. Latimer, E.A. Mahaffey, 2003. Veterinary laboratory medicine clinical pathology, 4th edition, Iowa state press, pp: 285.
- Harris, P., D.H. Snow, 1988. The effects of high intensity exercise on the plasma concentration of lactate, potassium and other electrolytes. Equine vet journal, 20(2): 109-113.

Conclusion:

So far most study on seral factors during resting and after exercise has been done, some of these studies consist of seral electrolytes titration, released enzymes from different tissues, hematology, function of respiratory system and cardiovascular system and etc., but these studies with one constant pattern has not been done, therefore different results dependent to type of used method has been reported. Standards methods are very importance because these methods in constant temperature and moisture will be

- Higgins, A.J., J.R. Synder, 2006. The equine manual. 2nd edition, Saunders elseviere pub, pp: 265-274,517.
- Hinchcliff, K.W., W.W. Muir, 2008. Pharmacology of furosemide in horse: A review. Journal of veterinary internal medicine, 5(4): 211-218.
- Houpt, A.K., 2001. Equine welfare. Available at: <http://www.ivos.org>.
- Hyppa, S., A.R. Poso, 1998. Fluid, electrolyte and acid-base responses to exercise in racehorses. Vet Clin North Am Equine Pract., 14(1): 121-136.
- Katzung, G.B., 2004. Basic and Clinical pharmacology. 9th edition, Mcgraw hill pub, pp: 61-62.
- Kayne, B.S., M.H. Jepson, 2007. Veterinary pharmacology. PhP pharmaceutical press.UK., pp: 258, 473.
- Keegan, K.G., 2008. Effectiveness of administration of phenylbutazone alone or concurrent administration of phenylbutazone and flunixinmeglumine to alleviate lameness in horses. Journal of American veterinary medical association, 232(4): 577.
- MacAllister, C.G., S.J. Morgan, A.T. Borne, R.A. Pollet, 1993. Comparison of adverse effects of phenylbutazone, Flunixinmeglumin, and Ketoprofen in horses. J Am Vet Med Assoc., 202(1): 71-77.
- Piccione, G., C. Giannetto, F. Fazio, Di S. Mauro, G. Caola, 2007. Serum electrolyte and protein modification during different workload in jumper horses. Journal of comparative clinical pathology, 16(2): 103-107.