1. Introduction

Joint disease is one of the most important causes of reduced performance and disability in the horse (TODHUNTER and LUST 1990). An accurate clinical and laboratory evaluation to distinguish between healthy and diseased joints as well as the degree of inflammation is fundamental to establish a judicious treatment, a future prognosis of soundness, and the proper time for returning to training and competing (DAGLEISH et al. 2003).

The analysis of synovia provides information about the metabolic state of the joint (GÄNGEL 1980; BOLBOL 1983). However, the analysis of synovial fluid does not lead to any specific diagnosis, except in the cases of septic arthritis. Moreover, it does not provide information about the degree of articular cartilage damage, but simply on the degree of synovitis (McILWRAITH et al. 2001). Therefore, research efforts have focused on the search for biomarkers of joint disease that allow a more precise and exact analysis of the status of a joint and its response to therapy.

Myeloperoxidase (MPO) is a heme enzyme contained in the azurophilic granules of the neutrophils (KLEBANOFF 1999). The enzyme catalyses the production of hypochlorous acid, the most toxic biological oxidant produced in great amount by the neutrophils (WEISS 1989). The MPO is of crucial importance for the natural defense of the host because of the role of hypochlorous acid and other MPO-derived molecules in the destruction of viruses, bacteria, fungi and protozoa (KLEBANOFF 1999; BABIOR 2000; SERTEYN et al. 2003). The enzyme may also be liberated into the extracellular milieu, exposing the tissues of the host to its deleterious effect (CLARK 1983; WEISS 1989; KLEBANOFF 1999).

The destructive role of the products of the MPO system in joint tissues like hyaluronate (BAKER et al. 1989; GREEN et al. 1990), proteoglycans (KOWANKO et al. 1989) and collagen fibers (DAVIES et al. 1993; OLSZOWSKI et al. 2003) has been widely demonstrated. Recently, LAMMER (2001) and SPELLMEYER (2003) reported a higher activity of MPO in synovial fluid from diseased joints in dogs when compared to healthy controls, proposing the activity of MPO as a biomarker for joint disease.

The aims of the current work are to study the activity of MPO in synovial fluid from diseased joints and tendon sheaths and its relationship to other synovial parameters and clinical signs

of joint disease. To the best of our knowledge, this is the first work focusing on these topics in the horse.