

VIII. SUMMARY

Randomized, placebo-controlled, double-blinded study to evaluate the efficacy of Cumarin (Ossarthrin) for the therapy of coffin-joint synovitis (podal arthritis) in horses.

- Under special consideration of the intraarticular pressure of the coffin-joint and its pathogenetic role.

This doctoral thesis focuses on the pathogenesis, diagnosis and therapy of the coffin-joint synovitis in horses (podal arthritis).

Though several different pathoanatomical, pathophysiological and pathobiochemical transformations of the coffin-joint and the navicular-bone are described in the context of the coffin-joint synovitis a comprehensive explanation of the pathogenesis of this disease still does not exist in literature. Nevertheless several studies in other species revealed the general pathogenetic processes of joint inflammation. Based on the existing scientific literature this thesis summarizes and explains the pathogenetic relationship between synovitis, alterations of the periarticular blood-circulation and the intraosseal pressure increase within the navicular-bone. In addition potential sources for the development of pain are discussed.

Various theories for the pathogenesis of navicular disease are originally derived from the attempt to develop correlations between the three different aspects of this complex of diseases (podotrochlear tendon injury/ bursitis podotrochlearis; ligament injury of the navicular bone; coffin-joint synovitis) considering its specific pathomorphological changes. Based on these hypothetical theories many therapeutic concepts using different systemic drugs were initiated for the treatment of navicular disease. The different therapeutical approaches published in literature are presented and discussed within this thesis.

Cumarin is characterized as an antiphlogistical, anti-edematous and tissue-protective substance. In literature successful cumarin treatment of podal arthritis in horses was described (FRICKER, 1995; STUKER UND FRICKER, 1997). The study evaluated the

efficacy of cumarin for the treatment of podal arthritis in a randomized, placebo-controlled and double-blinded clinical trial. Efficacy of the substance cumarin could not be proven in this trial. The expected decompression of the coffin-joint navicular-bone complex was not or only to a limited extent achieved.

Overall 33 horses with podal arthritis were included in this study and the course of the diseases was monitored over a minimal period of two to five months. For the evaluation of the efficacy of cumarin the following criteria were defined and assessed: degree of lameness, intra-articular pressure of the coffin-joint, and in dedicated cases level of regular work of the convalescent horses.

Beside the main question of the efficacy of cumarin the data collected in the study were analyzed regarding a correlation between intraarticular pressure increase and (a) lameness, (b) duration of the disease, as well as (c) level of radiological changes of the canales sesamoidales. The results revealed that the measurement of the intraarticular pressure is a useful diagnostic tool complementing standard clinical and radiological examination techniques.

During the period of convalescence measurement of intraarticular pressure plays an additional role as functional test to define the time to re-start and increase the level of regular work for the injured joint.