

APPLICATION OF THERMOVISION FOR THE DIAGNOSIS OF PODODERMATITIS IN GUINEA PIGS (*CAVIA PORCELLUS*)

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Abstract. The aim of this study was to measure skin temperature of guinea pigs *Tmt* (*Torus metatarsus*) and *Tt* (*Torus tarseus*), determine the inflammation symptoms by a thermovision method and to evaluate the possibilities of the application of this method for the diagnostics of pododermatitis. The experimental guinea pigs were divided into three groups: group I (control) – guinea pigs (n=9) with healthy metatarsal (*Tmt*) and tarsal (*Tt*) footpads and with the average temperature of skin in those areas $25.08\text{ }^{\circ}\text{C} \pm 1.36$; group II – guinea pigs (n=6) with healthy *Tmt* and *Tt* as well but with the average temperature $27.36\text{ }^{\circ}\text{C} \pm 1.27$; group III – guinea pigs (n=5) in which *Tmt* and *Tt* skin lesions were stated and the average temperature of skin in those areas was $33.02\text{ }^{\circ}\text{C} \pm 1.33$. During the experiment, a thermovisor FLIR E50 (FLIR System Inc., USA, 2011) was used. It was defined During the investigation of clinically healthy (control) guinea pigs by the method of thermovision, it was determined that the average temperature of tread and heel soft tissues was $25.03\text{ }^{\circ}\text{C}$. In guinea pigs with signs of pododermatitis, the average temperature of metatarsal and tarsal footpads was by $8.03\text{ }^{\circ}\text{C}$ higher ($p < 0.001$) than in clinically healthy (control) animals. In guinea pigs with no signs of pododermatitis, but with the average temperature of investigated skin areas higher by $2.32\text{ }^{\circ}\text{C}$ compared to the control group ($p < 0.001$), the presumption about the beginning of inflammation was made. Consequently, the method of thermovision can be used to diagnose the early stages of pododermatitis (skin inflammation development in local regions in guinea pigs) as temperature changes in skin can be defined before the manifestation of clinical signs.

Keywords: thermovision, guinea pig, pododermatitis.