



## DIAGNOSTIC VALUE OF WHOLE BODY BONE SCAN IN HORSES

*Donatella De Zani (1), Vanessa Rabbogliatti (2), Carlotta Spediacci (3), Giuliano Ravasio (2), Valerio Bronzo (2), Mauro Di Giancamillo (2), Davide Zani (2)*

(1) Università degli Studi di Milano, Centro Clinico Veterinario e Zootecnico Sperimentale, (2) Università degli Studi di Milano, Dipartimento di Medicina Veterinaria, (3) Libero Professionista, Bergamo

Scintigraphy is widely used in the assessment of musculoskeletal disorders and often it is considered as a screening tool in lame or poor performing horses. It is proved that nuclear scintigraphy is useful in highlighting the presence of lesions undetectable by clinical examination, in horses that do not respond to local analgesic blocks or with intermittent lameness[1]. Despite the usefulness of bone scan is proven, in a recent report, Quiney et al. observed that false-negative results predominate and may lead to missed diagnosis[2]. The aim of this study is to analyze the diagnostic usefulness of whole body bone scan in horses referred for lameness or poor performance. For this retrospective study, bone scans acquired at the Ospedale Veterinario Universitario di Lodi between July 2014 and February 2019 were reviewed. In the study have been included only horses that had a whole body bone scan. On the basis of the history, horses were classified as poor performing, for localized lameness or non-localized lameness. Scintigraphic findings were organized in five categories: definitive diagnosis, localization of the lameness, no findings related to the present clinical signs, findings of unlikely clinical significance and findings that need further investigations. A contingency table and a chi-squared test were used for the statistical analysis. One hundred and eighty horses underwent scintigraphy and 102 were included in the study; twenty-one horses were referred for lameness localized using diagnostic analgesia while in 44 horses the source of lameness was not identified. Thirty-seven horses had an history of poor performance. Statistical analysis highlighted that the only correlation between clinical history and scintigraphic findings was between horse referred for poor performance and findings of unlikely clinical significance (59.5% of horses with a poor performance diagnosis). A final diagnosis or localization of the source of pain were observed respectively in the 5.9% and in the 29.4% of horses. In 11 subjects (10.8%) were found increased radiopharmaceutical uptakes (IRU) of uncertain clinical significant that needed further investigations using analgesic blocks. In the 20% of cases, all referred for lameness, no findings related to the present clinical signs were found. In order to increase the capability of bone scintigraphy, it is mandatory to consider that the sensitivity and specificity are higher in specific regions[2] and the interpretation of the relevance of IRU must be based on detailed clinical examination. In conclusion, we confirm that whole body bone scintigraphy should not be considered a diagnostic screening especially in poor performing horses and that localization of lameness can improve the possibility of a positive result.

[1] Dyson S.J. Musculoskeletal scintigraphy of the equine athlete. *Semin Nucl Med*, 44:4-14, 2014. [2] Quiney L., Ireland J., Dyson S.J. Evaluation of the diagnostic accuracy of skeletal scintigraphy in lame and poorly performing sports horses. *Vet Radiol Ultrasound*, 59:477-489, 2018.