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Fluorescence light energy in the management of lacerated and contused wound in a horse

Traumatic wounds are frequently faced by the equine practitioner. Although primary closure is preferred, often wounds heal by second intention, a time-consuming process which may take several weeks with possible unsatisfactory functional results. Fluorescent light energy (FLE) represents an additional option in wound management and has been applied in small animal to manage different skin conditions including wounds and canine perianal fistulas. An 11-years-old Arabian stallion was presented to the Veterinary Teaching Hospital as first opinion consultation for a right hindlimb blunt-force contusion framed by a scalloped laceration, at the level of third metacarpal. The horse received systemic antibiotic and anti-inflammatory therapy for ten days with a limited response. Owing this, such treatments were discontinued and FLE (Phovia® Vetoquinol) management was started. It consisted of applying a roughly 2 mm layer of gel on the lesion and illuminating with the blue LED device that delivers noncoherent blue light with peak wavelength between 440 and 460 nm and a power density of between 55 and 129 mW/cm², for 2 min, at approximately 5 cm distance. After illumination, the gel was gently removed using sterile gauzes and a second cycle performed soon after. After FLE session, a protective bandage was applied. Phovia was administered twice weekly and after four FLE applications (2 weeks) granulation tissue fulfilled the laceration. Within 10 additional weeks (5 weeks) wound showed a >90% improvement in the extent of re-epithelization and FLE was discontinued after 7 weeks in total. This fluorescence-generating system is an innovative and non-invasive wound care device that promotes healing of wounds besides allowing regular monitoring of medical advancements. The present is only a case report but the obtained results suggest a possible role of FLE in daily practice for the management of wounds in horses which deserves to be better explored.

Biography:

Andrea Marchegiani, Researcher. Marilena Bazzano, Research fellow. Fulvio Laus, Professor.

The main field of interest and research concerns equine medicine and the application of fluorescent light energy in veterinary medicine. AM, MB, and FL are authors of publications in both national and international scientific journals and speakers in several national and international conferences.