Joint Event
11th International Conference on
OSTEOPOROSIS, ARTHRITIS & MUSCULOSKELETAL DISORDERS
&
10th INTERNATIONAL CONFERENCE ON ARTHROPLASTY
December 04-05, 2017 | Madrid, Spain

Effect of *Aphanizomenon flos–aquae* (AFA) on endogenous mesenchymal stem cell proliferation in African adult donkeys

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The aim of this study which lasted sixteen weeks was to study the effect of feeding *Aphanizomenon flos-aquae* (AFA) (Stem enhance®) on stem cell proliferation & hematologic parameters in fractured African adult donkeys. Nine donkeys with clinical cases of mid shaft open metacarpal and mid shaft open metatarsal fractures were used for this experiment. Animals were divided into groups A and B. Group A comprised 6 donkeys was further divided into A1 and A2. A1 comprised A1a, A1b and A1c while A2 consists of A2a, A2b and A2c. A1 was the study group fed with stem enhance®, while A2 was the control group that was untreated. Group B had three donkeys that were tagged B1 and B2. B1 was made up of B1a and B1b while B2 was the only animal in the group of B2. B1 was the study group fed with stem enhance® while B2 was the control that was untreated. Duration of the study was sixteen weeks where both study groups were fed 2 capsules of stem enhance® (2.5mg/capsule) each daily for two weeks per month and two weeks off (alternately). Both groups were managed clinically while documenting the same post-operative parameters. Hematological parameters (PCV, WBC, total protein, hemoglobin concentration, total white blood count), stem cell count, calcium and phosphorus assay was carried out for both groups pre- and post-operatively. Data obtained were analyzed and findings showed that stem cell count for the group treated with stem enhance® was significant ($P<0.05$). Values for total protein was lower in favor of group A ($P<0.05$), however P value>0.05 was recorded for PCV, WBC, hemoglobin concentration and total white blood count was not significant. It was concluded that stem enhance® is a potent stem cell enhancer and may be of value in reducing healing time of fractures in animals thereby facilitating early return of the study group to active physical exercise. From this experiment, the study group was shown to have a superior healing time of 13weeks as against the control group that had a healing time of 27 weeks.

Biography

Ochube Gabriel Enenche is a graduate of Ahmadu Bello University Zaria, Nigeria, West Africa. He bagged his Ph.D in November 2015 where specialized as an Equine Orthopedic Surgeon. He is a Fellow of the prestigious College of Veterinary Surgeons of Nigeria. He is a lecturer in the same University where he teaches both Undergraduate & Post-graduate clinical students in Large Animal surgery related courses. He has plenty publications in the related field in both local & international journals. He has a couple of conference papers & presentations (both local & international) to his credit. He has over 2 decade of clinical experience in Large Animal Practice.

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