Stress Of Captivity Of Animals & its Relationship With Elevated Cortisol Level

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Abstract- **The purpose if this study was to investigate the relationship between stress and cortisol levels in captive animals. Stress is defined as a physiological response to events perceived as potentially or actually threatening the integrity of the body. Saliva ,serum or urine cortisol has been extensively used as a stress indicator in many animals in the present investigation 20 Healthy oxens were selected for the case study the animals were divided into two groups one was the control which were kept free in and the second group was kept in captivity daily the salaiva was collected and the cortisol level was estimated it was fond that in captive animals the level of cortisol was significantly hgher than normal as compared to free animals.**

Key Words- **Stress , Captivity Raised Cortisol levels.**

Introduction

Animal Captivity is the confinement of domestic or wild animals that are held by humans and prevented form escaping captivity includes animals in farms zoos or laboratories Animal stress occurs when livestock is required to make prolonged adjustments in order to adapt to the current environment or surroundings. animal stress can be classified in three main ways physical due to fatigue or injury , physiological due to hunger ,thirst or temperature & biological stress due to production of stress hormones **Basant Bais** {2017} In mammals the most important stress hormone is cortisol when animals are faced with danger , cortisol is produced to help prepare for the body to face challenge **Lynn B.Martin** {2011}.Cortisol is an essential hormone which regulates the stress response the sources of stress include abiotic , & environmental factors like artificial lightening exposure to loud sounds arousing odours and uncomfortable temperatures or substances **Susen**{ 2019} When animals are kept in captivity the unfamiliar conditions can stimulate stress in them they may include presence of unfamiliar people & the typical unfamiliar movements of the people the new type of place of captivity type of diet given . Captive animals cannot choose their environment or carry out behaviors' necessary to enhance their welfare or survival .During stress the animal tends to adapt to the stress by the stress response which involves joint activity of nervous & endocrine systems the activation of sympathetic adrenal – Medulary axis and the hypothalamic pituitary adrenal axis enables the animals to response to stress **Karaer** {2023}. While the physical needs of animals are met in captivity the condition of confinement & exposure to unfamiliar persons results in physiological stress during stress there can be increased heart beats however captivity may have long term permanent impacts on the physiology of animals like elevated levels of glucocorticoids and reduced reproduction compared to free living animals normal values of cortisol are in between 6-23 mcg/dl .Stress in animals can be measured by measuring the Blood , Salaiva fecal sample for the levels of Cortisols. Stress can be also measured by observing behavioral changes

Materials & Methods

Twenty healthy Male oxens were selected for the experimental purpose the animals were divided into two groups group one the control animals which were kept in open farms while seconds group animals were kept in captivity daily for a period of one month ,Saliva was collected to measure the cortisol the Cortisol saliva test was performed with the test kit

Results and Discussion

The median saliva Cortisol concentration was 25 mcg /dl the concentration of cortisol was abnormally distributed it was quite higher than normal. Captivity may have long term permanent impacts on physiology , adjustment to captivity has been reported for some physiological systems in some species , however for many species permanent alterations in physiology may occur for example captive animals may exhibit elevated GC and reduced reproduction rate compared to free living animals full adjustment to captivity may occur in some species and may depend on the time period of captivity or other factors

There are many studies that focus on behavioral changes in captivity however the variables measured can be quite species specific and difficult to interpret **Jalil** {2022}

Verena behringer { 2017} Reported the animals in captivity are likely to get sick due physiological stress response multiple studies have measured the HC levels in relation to various endogenous and exogenous factors behavior in captive animals is also to be discussed the stereotypical behaviors' i.e repetitive and purposeless motor behaviors like self injury excessive self grooming such abnormal behaviors' are associated with stress **Erica j Crespi** {2012}

Hence it can be concluded tht the study of interactions between stress hormones and immune functions is still a young field yet research is needed for enhancing knowledge of stress coping mechanisms

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