Anesthesia and Sedation in Chough (Pyrrhocorax pyrrhocorax) Following Intranasal Administration of Diazepam, Midazolam, Xylazine with or without Ketamine: Clinical Evaluation

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Abstract

Objective- This study aimed to compare sedation efficacy in intranasal administration of xylazine, diazepam and midazolam with or without ketamine in Chough.

Design- To determine the sedation efficacy, an experimental in vivo study was employed.

Animals- Seven healthy Choughs were examined in the current study.

Procedures- With an interval of one week, seven healthy adult non domesticated Choughs of either genders, weighing 232.54±14.5 grams, were sedated or anesthetized by xylazine (8 mg/kg), diazepam (8mg/kg) and midazolam (8mg/kg) with or without Ketamine(30 mg/kg).

Results- Following intranasal administration of the subjects, sedation or anesthesia was produced in all groups.

Conclusion and Clinical Relevance- This study revealed that intranasal use of xylazine, diazepam and midazolame alone or combined with ketamine provides reliable sedation in Chough; however all anesthesia protocols are not perfect to be used in surgical procedures.

Keywords- Anesthesia, Sedation, Intranasal administration, Chough.

Introduction

When avian patients are suffering from surgical intervention and painful conditions, an appropriate use of a perfect anesthesia and an analgesia technique is of paramount importance.

Inhalation anesthesia is the veterinarian’s technique of choice; however, the anesthetic machines with calibrated vaporizers may not always be available. Some advantages of injectable anaesthesia in comparison with inhalant anaesthetics are better induction speed of anaesthesia, demanding less equipment and low cost.1

Intravenous injection is challenging in birds. Hence, intramuscular (IM) injection or subcutaneous routes are preferred in this regard. For IM administration, pectoral muscle injection is usually used; however, injecting needle to pectoral muscle may cause inadvertent intravascular or intracoelomic drug administration.2

Injections into the thigh muscles of small birds are not recommended since it may lead to nerve injury. Furthermore, an irritant drug being administered intramuscularly may result in pain. To avoid pain and anxiety caused by IM injections in children, intranasal route have been evaluated for the induction of sedation or analgesia.3,4

Intranasal administration of xylazine, midazolam and diazepam has been reported in some species of bird such as pigeons and canaries.5,6

This study aimed to determine the effect of ketamine and its combination with benzodiazepines (midazolam and diazepam) and α2-agonists (xylazine) on Choughs (Pyrrhocorax pyrrhocorax) and to design the best drug protocol for IN anaesthesia and sedation.

Materials and Methods

Animal

The protocol for this project was approved by the Institutional Animal Care and Use Committee of Lorestan University. Seven healthy adult non-domesticated Choughs of both genders, weighing...