

UNIVERSITI TEKNOLOGI MARA

**USE OF KETAMINE HYDROCHLORIDE AS
INTRANASAL ANAESTHESIA IN PET BIRDS**

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TABLE OF CONTENTS

ACKNOWLEDGEMENT.....	ii
TABLE OF CONTENT.....	iii
LIST OF TABLE	vi
LIST OF FIGURE	vii
ABSTRACT	viii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objectives.....	3
1.4 Significance of Study	4
1.5 Research Hypothesis	4
1.6 Scope and Limitations.....	4
CHAPTER TWO	6
LITERATURE REVIEW	6
2.1 Anaesthesia in Birds.....	6
2.1.1 Uses of Anaesthesia in Birds	8
2.1.2 Procedure for Anaesthesia Administration.....	9
2.2 Pet Birds.....	11
2.2.1 Common Species.....	12
2.2.2 Respiratory System	14
2.2.3 Cardiovascular System	15
2.3 Intranasal As a Route of Anaesthesia in Pet birds	16
2.4 Comparison between Intranasal and Parenteral Anaesthesia	16
2.5 Ketamine as Anaesthetic Agent	18

ABSTRACT

Parenteral anaesthesia is administration of anaesthesia by injection either intravenously, intramuscularly or intraperitoneally. Mortality rate due to parenteral anaesthesia in pet birds are high. Intranasal anaesthesia is a newly developed anaesthesia technique which utilizes administration of drug through nasal route to overcome stress and mortality due to painful parenteral anaesthesia. Nasal anaesthesia is not adopted in Malaysia for birds. This study investigates the effectiveness and recovery of using intranasal anaesthesia in pet birds compared to parenteral anaesthesia. Ketamine Hydrochloride (HCl) was administered as nasal drops with starting dose of 10mg. Thirty birds were analysed. Fifteen of them are prospective data for intranasal anaesthesia and another fifteen are retrospective parenteral data from previous records. Data were analysed by SPSS 20 using Independent T-test. Success of delivery is 100 percent after intranasal anaesthesia, no death of pet birds due to induction of intranasal anaesthesia by using Ketamine Hydrochloride solution while 86.67 % success of delivery after parenteral anaesthesia and 13.33 % had complications which led to death. Onset of action for intranasal anaesthesia is slower than parenteral anaesthesia. This is because 100 % of parenteral anaesthesia are delivered into the body system while some of the nasal drops used for intranasal anaesthesia run off from nostrils or flow into throat or respiratory tract. Recovery rate in birds by intranasal anaesthesia is faster than parenteral anaesthesia. The birds are subjected to less stress and trauma, thus need less time to heal. Recovery profile is better in intranasal anaesthesia as compared to parenteral anaesthesia. 100 % of the subject using intranasal anaesthesia obtained normal recovery and normal physiological function after the anaesthesia recovery while nearly half of the subject using parenteral anaesthesia had abnormal recovery after anaesthesia. In conclusion, usage of Ketamine Hydrochloride as intranasal anaesthesia in pet birds is as effective as parenteral anaesthesia. Intranasal anaesthesia shows excellent recovery in pet birds and reduced mortality of pet birds compared to parenteral anaesthesia.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Avians consist of over 9800 species. It is one of the most commonly kept pets. Common pet birds available in Malaysia are subdivided into several groups, which are Falconiforms and Strigiformes (birds of prey), Pesseriformes, Psittaciformes, Anseriformes, Galliformes and Columbiformes.

Pet birds often obtains injury when kept in captivity. Treatment requires induction of anaesthesia to prevent excessive stress during the painful procedure. Parenteral anaesthesia such as intravenous, intramuscular and intraperitoneal are the most common routes of anaesthesia used for pet birds. However, using parenteral anaesthesia produces deleterious effects in birds. An alternative to parenteral anaesthesia that is considered safer but efficient is by using intranasal anaesthesia which utilizes administration of drug through nasal route.

Birds need high metabolic rate in order to supply high oxygen demand used for flight. They have several physio-anatomical peculiarities that enable their system to work more efficiently to do so. Two most distinctive systems that directly involves with flight ability are respiratory and cardiovascular systems. Both respiratory and cardiovascular systems are very efficient. This theoretically provides advantage in using intranasal anaesthesia for pet birds.