LAPORAN MAGANG

STANDARDS OF PHARMACEUTICAL SERVICES IN ANIMAL HOSPITAL IPB UNIVERSITY AND SECONDARY ACUTE ANTERIOR UVEITIS WITH HYPHEMA IN A PURPOSE-BRED KITTEN

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Kelompok D PPDH Periode I Tahun Ajaran 2021/2022

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BAGIAN RESEPTIR DAN APLIKASI OBAT
PROGRAM PENDIDIKAN PROFESI DOKTER HEWAN
FAKULTAS KEDOKTERAN HEWAN
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Laporan Magang Reseptir dan Aplikasi Obat
sebagai salah satu syarat menyelesaikan
Mata Kuliah Reseptir dan Aplikasi Obat

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I INTRODUCTION

1.1 Background

Pharmaceutical services in animal hospitals are an inseparable part of the hospital service system that is focused on patient care, providing quality and affordable pharmaceutical preparations, medical devices, and medicinal products. “Reseptir dan Aplikasi Obat” is one of the courses in the Program Profesi Dokter Hewan (PPDH) of the Faculty of Veterinary Medicine (FKH) Bogor Agricultural University (IPB). PPDH students are required to know and understand pharmaceutical services at veterinary hospitals to improve the quality of pharmaceutical services in the field of veterinary medicine.

The definition of pharmaceutical service according to Permenkes number 76 of 2016 is a direct service to patients related to pharmaceutical preparations with the aim of achieving definite results to improve the quality of life of patients. Pharmaceutical activities that initially only focused on drug management as a commodity became a comprehensive service. Hospital pharmacists are responsible for all pharmaceutical goods circulating in hospitals. The Ministry of Health (2004) explains that the practice of pharmaceutical services is an integrated activity with the aim of identifying, preventing, and resolving drug problems and health-related problems.

Hospital pharmacy services are one of the activities in hospitals that support quality health services. This is explained in the Decree of the Minister of Health Number 1333/Menkes/SK/XII/1999 concerning Hospital Service Standards, which states that hospital pharmacy services are an inseparable part of the hospital health care system that is oriented to patient care, providing medicines that are quality, including clinical pharmacy services, which are affordable for all levels of society.

1.2 Aim

The purpose of this paper is to study the system of pharmaceutical services as well as the therapy involved in treating uveitis in a kitten.

1.3 Benefits

This paper was written in hopes to expand knowledge and skills on the pharmaceutical service system in the veterinary medical fields and to study the suitable therapy and management of uveitis in a kitten.

II OVERVIEW

2.1 Veterinary Medical Services

Veterinary medical services are described in Ministerial Regulation number 03 of 2019 as services related to the competence of veterinarians provided to the public in the context of veterinary practice. Types of veterinary services include: providing diagnosis and prognosis of animal diseases, therapeutic transactions, consulting on animal health and educating clients or the public regarding animal health and the environment. Veterinary medical services can be provided for terrestrial animals, wild animals, and aquatic animals, including their products (Ministry of Agriculture 2019).

Diagnosis and prognosis of animal disease can be done clinically, pathologically, laboratoric, forensically, or epidemiologically. An accurate diagnosis is important in determining the best course of action and therapy. Therapeutic actions can be carried out in the form of promotive, preventive, curative, rehabilitative, and reproductive medical services.

In its implementation, veterinary medical services are carried out by animal health personnels, which consist of veterinary medical personnel, veterinary paramedics, and veterinary medicine graduates. Veterinary medical personnel consist of Veterinarians and Specialist Veterinarians. Veterinary paramedics consist of animal health veterinary paramedics, artificial insemination veterinary paramedics, pregnancy examination veterinary paramedics, and veterinary paramedic assistants for reproductive techniques.

2.2 Pharmaceutical Services

Pharmaceutical services is defined as a direct and responsible service to patients related to pharmaceutical preparations with the aim of achieving definite results to improve the quality of patient life. Pharmaceutical services in pharmacies include 2 activities, namely managerial activities in the form of managing Pharmaceutical Preparations, Medical Devices, and Medical Consumables and clinical pharmacy services. These activities must be supported by human resources, facilities and infrastructure. Pharmacy services are carried out by pharmacists in pharmacies. In its implementation, pharmacists are assisted by pharmaceutical technical personnel consisting of pharmacy graduates, pharmacy associate experts, and pharmaceutical analysts. Setting standards for pharmaceutical services in pharmacies aims to improve the quality of pharmaceutical services, ensure legal certainty for pharmaceutical staff, and protect patients and the public from irrational use of drugs in the context of patient safety (Permenkes 2016).

The standards of implementation of pharmaceutical services are used as guidelines for pharmaceutical staff in providing pharmaceutical services. The standards consist of the management of pharmaceutical preparations, medical devices, medical consumables, and clinical pharmacy services. Management of pharmaceutical preparations, medical devices, and medical consumables includes planning, procurement, receipt, storage, destruction, control, and recording and reporting. Meanwhile, clinical pharmacy services include prescription assessment,

dispensing, Drug Information Services (PIO), counseling, home pharmacy care, Drug Therapy Monitoring (PTO), and Drug Side Effect Monitoring (MESO).

2.3 IPB FKH Veterinary Teaching Hospital

Veterinary Hospitals provides veterinary medical services managed by a Veterinarian in charge. It has facilities for observation of sick animals, emergency services, diagnostic laboratories, inpatient care, intensive care units, isolation rooms, and can receive referrals for veterinary medical services (Ministry of Health 2019).

Organizational Structure

Table 1 Structural organization at RSHP IPB FKH

Jabatan	Nama
Executive Director	Dr Drh Gunanti, MS
Assistant Director of Medical Affairs	Drh Arni Diana Fitri, MSi
Assistant Director of Education	Drh Arifin Budiman Nugraha, MSi, PhD
Assistant Director of Administration and Resources	Drh Supriyono, MSi, PhD
Assistant Director of Information and Development	Drh Mokhamad Fakhrul Ulum, MSi, PhD
Secretary Executive Director	Drh Tri isyani Tungga Dewi, M.Si
Doctors on Duty	Drh Rindy Isyani Tungga Dewi, M.Si Drh Hamdika Yendri Putra Drh Nurul Annisa Tuliman Drh Erly Rizky Adistya
Front Office	Rusli Indri Wahyuni Ekka Abby Anugrah Pratama, S.Ikom Andini Lestari
Public Facilities and Infrastructure	Firman Friyadi Supriono Syamsudin
Paramedic	Agus Sutrisno Yuri Bambang Patria Andri Suhendri Ari Bambang Hidayat Mahadi Subianto Rakhmy Yasyri, S.Pt

History

IPB Veterinary Hospital has been established for almost 21 years since it was inaugurated by the former President of the Republic of Indonesia, Abdul Rahman Wahid on 11th October 2000 at the Dramaga campus of IPB, Bogor. Initially the IPB RSH was managed by the Management Team of the IPB Faculty of Veterinary Medicine in accordance with the IPB Rector's Decree No. 052/K13.12.1/KP/2000, but in July there was a change in the reporting of accountability directly under the Rector of IPB. RSH FKH IPB finally transformed back into the Veterinary Hospital of the Faculty of Veterinary Medicine IPB (RSHP FKH IPB) in May 2015 which

was supported by 19 staff and employees (7 people with civil servant status) and 7 veterinarians from FKH IPB.

Vision and Mission

RSHP FKH IPB as a veterinary hospital for the referrals of veterinary specialist and selected for the leading, professional, independent, dignified, and dedicated to the interests and prosperity of the Indonesian nation. The mission of RSHP FKH IPB consists of 3 aspects, namely Education, Research, and Service. Aspects of Education RSHP FKH IPB is a means to train students' practical skills at D3, SKH, PPDH levels and support specialist programs and the development of continuing professional education. The research aspect is the facilities and infrastructure for conducting basic and applied research include the preparation of standardized laboratory animals and facilities while observing ethical rules for the use of animals. The service aspect is a means to provide animal health services to the community in the form of examination, diagnosis, treatment, and prevention, including zoonotic diseases.

2.4 Pharmacy Installation at Veterinary Teaching Hospital FKH IPB

Pharmacy installation is a functional unit that organizes all pharmaceutical service activities in hospitals. The hospital pharmacy installation must be LED by a pharmacist who is the pharmacist in charge of all pharmaceutical services in the hospital. The head of the hospital installation is preferred to have experience working in a hospital pharmacy installation for at least 3 years (Ministry of Health 2014). The hospital pharmacy installation functions as a service unit and a production unit. The service unit in question is a management service (non-clinical) which is a service that does not come into direct contact with patients and other health workers. Pharmaceutical services that provide elements of logistics or health supplies and administrative aspects. Pharmacy Installation functions as a non-management service (clinic) that is in direct contact with patients or other health care providers. This role is patient-oriented so that it requires a broader understanding of aspects related to the use of drugs and their illness and upholds ethics and behavior as a unit that carries out reliable and professional pharmaceutical care (Rusly 2016).

The facilities and infrastructure needed to support Pharmaceutical Services at the RSHP IPB Pharmacy include:

1. Recipe reception counter

This counter is placed at the very front and is easily visible to the owner.

2. Recipe and compounding service room (limited production of preparations)

Room for prescription and compounding services or limited production of preparations includes drug racks and compounding tables. The compounding room is provided with compounding equipment, drug scales, medicine spoons, drug packaging materials, refrigerators, prescription copies, drug labels and labels. This room must be arranged so that it gets sufficient light and air circulation, it can be equipped with air conditioner.

3. Medicine delivery room
Drug delivery room in the form of a drug delivery counter combined with a prescription reception room.

4. Storage space
Pharmaceutical preparations, medical devices, and medical consumables are kept in storage rooms with proper sanitary conditions, temperature, humidity, ventilation, separation to ensure product quality and staff safety. The storage room must be equipped with drug racks/cupboards, pallets, air conditioners (AC), refrigerators, special narcotics and psychotropic storage cabinets, special drug storage cabinets, temperature gauges and temperature cards.

5. Archive room
The archive room is needed to store documents related to the management of pharmaceutical preparations, medical devices, and consumable medical materials as well as pharmaceutical services within a certain period of time.

Pharmaceutical Supply Management

Management of pharmaceutical preparations, medical devices, and medical consumables, including: selection, planning, procurement, purchase, storage, distribution, destruction and withdrawal, control, and administration.

1. Selection

Selection is needed to determine the types of pharmaceutical preparations, medical devices, and medical consumables necessary. This selection is based on the formulary and standard of diagnostic and therapeutic treatment; standards for pharmaceutical preparations, medical devices, and medical consumables that are set; disease pattern; effectiveness and safety; evidence-based treatment; quality; price; and market availability. The veterinary hospital formulary is a list of drugs agreed upon by the media staff, compiled by the pharmacy and therapy team, approved by the hospital management.

The criteria for selecting drugs to enter the veterinary hospital formulary are as follows: prioritizing the use of generic drugs; has the most beneficial risk-benefit ratio for the sufferer; guaranteed quality, including stability and bioavailability; practical in storage and transportation; practical in use and delivery; advantageous in terms of patient compliance and acceptance; has the highest benefit-cost ratio based on direct and indirect costs; and other drugs that are scientifically proven to be effective and safe to provide affordable services.

2. Planning

Planning is an activity to determine the amount and period of procurement of pharmaceutical preparations, medical devices, and medical consumables in accordance with the results of the selection activities to ensure the fulfillment of the criteria for the right type, the right amount, on time, and efficiency. Planning is carried out to avoid drug vacancies by using methods that are accountable and the basics of planning that have been determined. Planning guidelines should take into

account the available budget, prioritization, remaining inventory, past period usage data, order lead times, and development plans.

3. Procurement

Effective procurement must ensure the availability and sufficient quantity at affordable prices and according to the required standards. Procurement is a continuous activity starting from the selection, determination of the required amount, adjustment between needs and funds, selection of procurement methods, supplier selection, determination of contract specifications, monitoring of the procurement process, and payment.

4. Receiving

When receiving stock, it is important to ensure the correct type, specifications, quantity, quality, delivery time and price stated in the contract or order letter with the physical condition received. All documents related to the receipt of goods must be stored properly.

5. Storage

The method of storage is imporant to maintain the quality and safety of pharmaceutical preparations, medical devices, and medical consumables in accordance with pharmaceutical requirements. The pharmaceutical requirements in question include requirements for stability and safety, sanitation, light, humidity, ventilation, and classification of types of pharmaceutical preparations, medical devices, and consumable media materials. Pharmacy installations must ensure that drugs are stored properly and inspected periodically.

Storage methods can be carried out based on therapeutic class, dosage form, and type, arranged alphabetically by applying the principles of First Expired First Out (FEFO) and First In First Out (FIFO) accompanied by a management information system. Veterinary hospitals must be able to provide storage locations for emergency drugs for emergency conditions. The place of supply must be easily accessible and free from misuse and theft.

6. Distribution

Distribution is a series of activities in the context of distributing/delivering pharmaceutical preparations, medical devices, and medical consumables from storage to service units/patients while ensuring quality, stability, type, quantity, and timeliness. Veterinary hospitals must determine a distribution system that can ensure the implementation of supervision and control of pharmaceutical preparations, medical devices, and medical consumables in the service unit. The distribution system in the service unit can be carried out by means of a complete inventory system in the room (floor stock), an individual prescription system, a unit dose system, or a combination system. The distribution system is designed on the basis of being easy to be reached by clients/patients by considering the efficiency and effectiveness of existing resources as well as centralized or decentralized methods.

7. Destruction and Withdrawal

The destruction of pharmaceutical preparations, medical devices, and consumable medical materials that cannot be used must be carried out in a manner that is in accordance with the provisions of the applicable laws and regulations. Destruction is carried out if the product does not meet the quality requirements, has expired, does not meet the requirements for use in health services or for scientific purposes, and the distribution permit is revoked.

8. Control

Control is carried out on the type and amount of inventory and the use of pharmaceutical preparations, medical devices, and consumable medical materials. Control can be carried out by the Pharmacy Installation in collaboration with the Pharmacy and Therapeutic Team at the veterinary hospital. The purpose of control is to use the drug in accordance with the formulary of the veterinary hospital. The use of drugs is in accordance with diagnosis and therapy, ensuring effective and efficient inventory or no excess and shortage/empty, damage, expiration, and loss and return of orders. The control method is to evaluate inventory that is rarely used (slow moving), evaluate inventory that is not used for three consecutive months (death stock), stock take which is carried out periodically and periodically.

9. Administration

Administration is carried out continuously and in an organized manner for the monitoring of activities. Administrative activities consist of recording and reporting, financial administration, and administration of destruction of goods.

III DISCUSSION

SECONDARY ACUTE ANTERIOR UVEITIS WITH HYPHEMA IN A PURPOSE-BRED KITTEN

Introduction

Uveitis is defined as inflammation of the uveal tract which consist of the iris, ciliary body and choroid. It is one of the most frequently observed occular disease in dogs and cats. It is not a single disease but a common manifestation of many different diseases. It affects cats and dogs of all breeds, age and sex. Uveitis can be very painful and if not treated, can lead to vision loss (Morgan 2019).

Inflammation can affect the entire uvea, which is the middle or vascular tunic of the eye, or either the anterior or the posterior chamber. Anterior uveitis may affect the cornea, anterior chamber, iris and lens, whereas posterior uveitis may be located in the fundus and vitreous (Shukla & Pinard 2012). Uveitis can also be classified as acute or chronic based on the duration of onset. The causes of uveitis are varied and occcasionally a cause may not be identified.

Literature Review

Anatomy of the Uvea

The uvea is a highly vascular middle layer of the eye which is located beneath the sclera. It comprises of the iris, ciliary body and the choroid. The iris and ciliary body make up the anterior uveal tract, and the choroid composes the posterior uveal

tract. Iritis and cyclitis refer to inflammation of the iris and ciliary body, respectively. Anterior uveitis, or iridocyclitis, is present when both the iris and ciliary body are inflamed. Posterior uveitis denotes inflammation of the ciliary body and choroid (Maggs DJ 2009).

The blood-aqueous barrier (BAB) is a selectively permeable membrane which prevents the influx of blood and proteins into the aqueous humor. Uveal inflammation may cause a diruption to the tight junctions of the cells causing protein and blood to leak into the aqueous of the eye. The increase in protein concentration in the aqueous humor causes light scattering a phenomena known as aqueous flare, which is a hallmark of uveitis (Wasik & Adkins 2010).

Etiology

The causes of uveitis can be divided into primary, systemic or idiopathic. Primary uveitis can arise from blunt trauma to the eye or the head, penetrative ocular trauma, neoplasia or deep keratitis. Direct head or ocular injury can lead to uveitis through rupture of the fibrous tunic, lens luxation, retinal detachment or corneal endothelial damage (Sorrell *et al.* 2008).

A systemic etiology can be due to infectious or non-infectious diseases. In felines systemic diseases that may cause uveitis include feline infectious peritonitis, feline leukemia virus, feline immunodeficiency virus, feline herpesvirus, toxoplasmosis, cryptococcosis, and bartonellosis (Colitz 2005). In canines, uveitis may arise from *Ehrlichia canis*, Leptospirosis, Bartonellosis, Leishmaniasis, Dirofiliarisis and mycotic agents. Non-infectious causes of uveitis include lymphocytic-plasmacytic anterior uveitis and secondary ocular neoplasia (Wasik & Adkins 2010).

Idiopathic uveitis is commonly reported in both canines and felines. Aggressive symptomatic treatment is recommended as recurrence is often common in idiopathic uveitis.

Clinical signs

The non-specific clinical signs associated with uveitis include blepharospasm, photophobia, increased lacrimation and enophthalmos. The globe also may appear red due to hyperemia of the ciliary vessels. Corenal edema may also occur as a result of uveitis (Wasik & Adkins 2010).

Anterior uveitis can be diagnosed with the presence of an aqueous flare which is due to the breakdown of the BAB. Accumulation of purulent material in the anterior chamber is known as hypopyon while an accumulation of blood is called hyphema. Both of this may be present during anterior uveitis. Keratic precipitates which are inflammatory cell aggregates may also be seen in the ventral part of the cornea. Miosi which and ciliary muscle spasm contributely largely to the pain associated with anterior uveitis (Wasik & Adkins 2010).

As for posterior uveitis, examination of the vitreous body may reveal inflammatory cells diffused in the vitreous. A fundic examination is necessary to fully evaluate the retina and the choroid. Extensive inflammation may lead to retinal detachment which may be bullous with fluid exudates. Hemorrhage may also be present within the vitreous (Wasik & Adkins 2010).

Diagnosis

The physical exmaination of the eyes should include a neuro-ophtalmic examination should also be carried out comprising of the dazzle reflex, menace response, pupillary light reflex and the palpebral reflex. A Schirmer tear test may also be beneficial in evaluating abnormal tear gland production. A Fluorescein dye test may be used to rule out the presence of a corneal ulcer. If a corneal ulcer is detected, topical corticosteroids should be avoided. Intraocular pressure and examination of the ocular structures by opthalmoscopy should also be carried out (Shukla & Pinard 2012). To rule out systemic disease causes, a full hematology consisting of complete blood count an serum biochemistry together with urinalysis should be carried out. The presence of cellular infiltrates may warrant a cytologic evaluation of the aqueous humor which can identify etiologic agents or neoplastic cells (Wasik & Adkins 2010).

Treatment

Regardless of the cause of uveitis, the main goal of treaments are to decrease inflammation, reduce ocular pain, stabilize the BAB and to preserve vision. A mydriatic such as atropine or tropicamide should be administered when miosis is observed. Mydriatics are indicated to prevent the development of posterior synechiae and to provide analgesia through cycloplegia or paralysis of the ciliary muscle. Maintaining dilation of the pupil is done by administrating mydriatics two to three times daily until clinical improvement of uveitis is seen (Townsend 2008).

Due to the inflammatory nature of uveitis, topical and systemic antiinflammatory preparations are warranted. Topical corticosteroids are recommended to reduce inflammation, and to decrease protein leakage and deposition. Systemic corticosteroids are reserved for posterior uveitis or severe anterior uveitis. Systemic NSAIDS are recommended in the treatment of uveitis when corticosteroids are contraindicated. Choices for injectable or oral NSAIDs for canines include aspirin, acetaminophen, piroxicam, ketoprofen, meloxicam and carprofen (Wasik & Adkins 2010). In cats, meloxicam is a possible choice of NSAID (Shukla & Pinard 2012).

Signalment and Anamnesis

A 7 weeks old, male, domestic shorthaired kitten(1.3kg) obtained from a commercial feline vendor was found to have developed hyphema and blepharospasm in the left eye. The kitten was kept in a pen with six other kittens and was the only kitten to develop uveitis.

Physical examination

Marked hemorrhage in the ventral anterior chamber which partly obscures the miotic pupil on the left eye. Ocular discharge was absent. Fluorescein dye test showed absence of a corneal ulcer. Facial features were symmetrical with absence of swelling or tenderness. Neuro-opthalmic examination of the eye showed normal response for pupillary light reflex and dazzle reflex while a menace response was absent in the left eye.

Diagnostic tests

A complete hematology comprising of a hemogram, serum biochemistry and coagulation profile was done and values were within normal limits. To rule arterial

hypertension induced hyphema, blood pressure was taken and values were not indicative of hypertension. Glaucoma was ruled out by taking tonometric measurements. Serologic tests for *Bartonella henselae* , feline leukemia virus antigen, and feline immunodeficiency virus antibody were negative. After ruling out the other possible causesa of uveitis, trauma was the suspected etiology in this case. The diagnosis was secondary acute anterior uveitis with hyphema due to trauma.

Therapy

Clinical signs	Drugs	Dose	Duration	Dosage Calculation
Uveitis	1% Prednisolone acetate opthalmic suspension	1 drop q6h	4 times a day (10 days)	-
	1% Atropine sulphate opthalmic solution	1 drop q12h	Twice a day (10 days)	-
Pain	Meloxicam 0.25mg PO	0.192mg/kg	Once a day (10 days)	DTD: 0.192mg/kg x 1.3kg = 0.25mg Non DTD: 0.25mg x 1 x 10 days = 2.5mg

Generic **Patent**

KLINIK HEWAN LIEW Drh. Liew Kah Joon Alamat: Petaling Jaya, Selangor Tlp. 081272715939 Jam Praktik: Senin-Jum'at (15.00-18.00 WIB) SIP.021/SIP/BG/2021	KLINIK HEWAN LIEW Drh. Liew Kah Joon Alamat: Petaling Jaya, Selangor Tlp. 081272715939 Jam Praktik: Senin-Jum'at (15.00-18.00 WIB) SIP.021/SIP/BG/2021
Selangor , 9 November 2021 R/ Prednisolone acetate 1% eyedrop fls No I s.4.d.d. gutt. I os. …….....Paraf R/ Atropine sulphate 1% eyedrop fls No I s.2.d.d gutt I os. …….....Paraf R/ Meloxicam tab 1mg s.1.d.d $\frac{1}{4}$ tab po pc …….....Paraf	Selangor , 9 November 2021 R/ Pred Forte fls No I s.4.d.d. gutt. I os. …….....Paraf R/ Atropine Care fls No I s.2.d.d gutt I os. …….....Paraf R/ Rheumocam tab 1mg s.1.d.d $\frac{1}{4}$ tab po pc …….....Paraf
Jenis : Kucing Breed : DSH Nama : Ket (1.3kg) Nama pemilik : Mr. Son Alamat : Jalan Senget, Kuala Lumpur	Jenis : Kucing Breed : DSH Nama : Ket (1.3kg) Nama pemilik : Mr. Son Alamat : Jalan Senget, Kuala Lumpur

Discussion

The main goal of therapy of uveitis is reducing inflammation, stabilizing the BAB, decreasing pain and preserving vision. Anti-inflammatory therapy is vital in the therapy of uveitis. In this case, inflammation was controlled using topical prednisolone acetate 1% eyedrops and oral meloxicam. Topical application of corticosteroids is the preferred route as it allows high local drug concentration and minimal systemic side effects. Prednisolone acetate achieves a high intraocular concentration and is the drug of choice for anterior uveitis. The frequency of administration depends on the severity, location and etiology of the disease (Wasik & Adkins 2010). Topical corticosteroids are contraindicated in the presence of corneal ulcers as it can cause worsening of the ulcer due to collagenolysis, local immunosuppression and delayed wound healing (Maggs 2009). The addition of meloxicam, a systemic non-steroidal anti-inflammatory drugs (NSAID), was used to decrease general inflammation and provide analgesia (Sorrell *et al.* 2008). NSAIDs are not immunosuppressive and may be preferred when corticosteroids are contraindicated.

Atropine sulphate is a parasympatholytic drugs which paralyzes the iris sphincter and ciliary body muscles causing mydriasis and cycloplegia. Pupil dilation should be maintained throughout the therapy as it holds many important benefits (Shukla & Pinard 2012). It reduces the leakage of vascular elements into

the aqueous humor; iris surface are is decreased, reducing inflammatory mediators and vascular components; uveal vascular endothelial permeability is reduced; and the risks of posterior synechia is also lowered. Cycloplegia diminishes ocular pain but increases the resistance to aqueous outflow which is desirable in most cases of uveitis except when glaucoma is present (Maggs 2009).

CONCLUSION

Pharmaceutical services, prescription service management and information system management are vital in ensuring the quality of hospital pharmacy service as well as enabling record tracking of the prescription history of a patient. Uveitis is a complex ocular disorder with several etiologies. Proper treatment is important in alleviating patient discomfort and preventing further unrepairable damage to the eye.

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