ANIMAL BITES, HOW TO MANAGE?

Key facts

- Animal bites are significant cause of morbidity and mortality worldwide.
- Worldwide, up to five million people are bitten by snakes every year; the majority in Africa and South-East Asia.
- Prompt medical treatment with appropriate antivenom is required for poisonous snake bites.
- Dog bites account for tens of millions of injuries annually; the highest risk is among children.
- Rabies is a significant health concern following dog bites, cat bites and monkey bites.

Animal bites pose a major public health problem in children and adults worldwide. The health impacts of animal bites are dependent on the type and health of the animal species, the size and health of the bitten person, and accessibility to appropriate health care. Numerous animal species have the potential to bite humans; however the most important are those arising from snakes, dogs, cats and monkeys. [1]

SNake BITE

Frequently, victims of snake bites will require treatment with antivenom. It is important that the antivenom is appropriate for snakes endemic to the region. Additional measures include wound cleansing to decrease infection risk, supportive therapy such as airway support, and administration of tetanus vaccine upon discharge if the person has been inadequately vaccinated against tetanus. [1]

The choice of antivenom is clear provided the diagnosis of envenoming species is correct, or the syndrome approach is rightly applied. The dosing regimen, however, requires optimal monitoring of syndrome progression and clinical judgment from case to case, while referring to the dosage recommendation. All antivenom is administered intravenously.

Adrenaline should be prepared in readiness to treat possible anaphylaxis, that may occur in response to antivenom. This must be prepared before the administration of antivenom (0.5 mg for adults and 0.01mg/kg body weight for children (0.1% solutions, 1 in 1,000 dilution,1mg/ml). [2]

Figure 1: Flowchart management of snakebite in hospital. [2]
CAT, DOG AND MONKEY BITES

Treatment depends on the location of the bite, the overall health condition of the bitten person and whether or not the dog is vaccinated against rabies. The main principles of care include:

- early medical management;
- irrigation and cleansing of the wound;
- primary closure if the wound is low-risk for developing infection;
- prophylactic antibiotics for high-risk wounds or people with immune deficiency;
- rabies post-exposure treatment depending on the dog vaccination status; administration of tetanus vaccine if the person has not been adequately vaccinated. [1]

<table>
<thead>
<tr>
<th>Infection/Condition &amp; Likely Organism</th>
<th>Suggested Treatment</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bites (penetrating injuries)</td>
<td>Preferred</td>
<td>Alternative</td>
</tr>
<tr>
<td><em>Staphylococcus aureus, Streptococcus, Gram negative Bacilli, Anaerobes</em></td>
<td>Amoxicillin/Clavulanate 625mg PO q8h</td>
<td>Doxycycline 100mg PO q12h PLUS Clindamycin 300mg PO q6h</td>
</tr>
</tbody>
</table>
| *Pasteurella (50% dog bites and 75% cat bites)* | If severe/life threatening: Ampicillin/Clavulanate 1.5-3gm IV q6-8h OR Piperacillin/Tazobactam 4.5gm IV q8h | Prophylactic duration: 5 days
- Associated crush injury
- In the hands or proximity to a joint
- Associated edema
If infected: 10 days |

Table 1: Management of animal bite according to National Antibiotics Guidelines 2014 [3]

HUMAN RABIES IMMUNE GLOBULIN

"Human rabies immune globulin (HRIG) is administered only once, at the beginning of anti-rabies prophylaxis, to previously unvaccinated persons.*

- This will provide immediate antibodies until the body can respond to the vaccine by actively producing antibodies of its own.
- If HRIG was not administered when vaccination was begun, it can be administered up to seven days after the administration of the first dose of vaccine. Beyond the seventh day, HRIG is not recommended since an antibody response to the vaccine is presumed to have occurred.

Because HRIG can partially suppress active production of antibody, no more than the recommended dose should be administered. The recommended dose of HRIG is 20 IU/kg body weight. This formula is applicable to all age groups, including children. [4]
RABIES VACCINE

A regimen of **four 1-ml doses of Human Diploid Cell Vaccine (HDCV)** or **Purified Chick Embryo Cell Vaccine (PCEC)** should be administered intramuscularly to previously unvaccinated persons.

The **first dose of the four-dose course should be administered as soon as possible after exposure.** Additional doses should be administered on **days 3, 7, and 14** after the first vaccination. For adults, the vaccination should always be administered intramuscularly in the deltoid area (arm). For children, the anterolateral aspect of the thigh is also acceptable. The gluteal area should never be used for rabies vaccine injections because observations suggest administration in this area results in lower neutralizing antibody titers. [5]

---

**Table 2: Postexposure Prophylaxis for Non-Immunized Individuals. [5]**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound cleansing</td>
<td>All postexposure prophylaxis should begin with immediate thorough cleansing of all wounds with soap and water. If available, a virucidal agent such as povidone-iodine solution should be used to irrigate the wounds.</td>
</tr>
<tr>
<td>RIG</td>
<td>If possible, the full dose should be infiltrated around any wound(s) and any remaining volume should be administered IM at an anatomical site distant from vaccine administration. Also, RIG should not be administered in the same syringe as vaccine. Because RIG might partially suppress active production of antibody, no more than the recommended dose should be given.</td>
</tr>
<tr>
<td>Vaccine</td>
<td>HDCV or PCECV 1.0 mL, IM (deltoid area), one each on days 0, 3, 7, and 14.</td>
</tr>
</tbody>
</table>

* A 5th dose on day 28 may be recommended for immunocompromised persons.

**Table 3: Postexposure Prophylaxis for Previously Immunized Individuals. [5]**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound cleansing</td>
<td>All postexposure prophylaxis should begin with immediate thorough cleansing of all wounds with soap and water. If available, a virucidal agent such as povidone-iodine solution should be used to irrigate the wounds.</td>
</tr>
<tr>
<td>RIG</td>
<td>RIG should not be administered.</td>
</tr>
<tr>
<td>Vaccine</td>
<td>HDCV or PCECV 1.0 mL, IM (deltoid area), one each on days 0 and 3</td>
</tr>
</tbody>
</table>

---

**REFERENCES:**

Safety updates:
Hyoscine Butylbromide Injection:
Risk of Serious Adverse Effects
in Patients with Underlying Cardiac Disease

Overview
Hyoscine or scopolamine is an anti-spasmodic drug that is used to relieve spasm in the stomach, intestines or bladder. In Malaysia, hyoscine butylbromide injection is approved to reduce oral secretions before surgery, and to treat gastrointestinal or genitourinary tract spasms, as well as motility disorders of the biliary system.

Background of Safety Issue
The United Kingdom’s Medicines and Healthcare Products Regulatory Agency (MHRA) has requested updates of the product information for all hyoscine butylbromide injections on the risk of serious adverse reactions in patients with underlying cardiac disease. This decision was triggered by eight (8) reports of patients who died after receiving hyoscine butylbromide injection. The fatal adverse reaction was reported as acute myocardial infarction or cardiac arrest in most of these cases. Hyoscine butylbromide injection is known to cause adverse effects including tachycardia, hypotension, and anaphylaxis. However, studies have shown that these effects can be more serious in patients with underlying cardiovascular disease such as heart failure, coronary heart disease, cardiac arrhythmia or hypertension. This may be attributed to an increased number of cardiac mast cells in patients with pre-existing cardiac disease, which results in the release of high concentrations of cardiotoxic mast cell mediators during serious adverse events such as anaphylaxis. Besides that, the presence of any atherosclerotic lesions make the coronary arteries more susceptible to the effects of mast cell and basophil-derived mediators.

Local Scenario
Currently, there are five (5) injectable products containing hyoscine butylbromide registered with the Drug Control Authority (DCA). Hyoscine butylbromide was first registered in Malaysia in 1988.

Adverse Drug Reaction (ADR) Reports
From year 2002 to December 2016, the NPRA has received 147 ADR reports with 283 adverse events associated with hyoscine butylbromide (all dosage forms). The most commonly reported adverse events were minor skin reactions (rash, pruritus and urticaria). Of the total reports received, 57 were related to hyoscine butylbromide injectable products. Besides the skin reactions mentioned above, some patients who received hyoscine injections were reported to suffer shortness of breath, blurred vision, and flushing. Adverse events involving the System Organ Class (SOC) Cardiac Disorders were palpitation, tachycardia and syncope. NPRA has reviewed this safety issue and is looking into strengthening the precautions and warnings in local product information for hyoscine butylbromide injections. NPRA will continue to monitor this risk in relation to oral preparations.

Advice for Healthcare Professionals
- Hyoscine butylbromide injection may cause serious adverse effects including tachycardia, hypotension, and anaphylaxis.
- Exercise caution when using hyoscine butylbromide injection to treat patients with underlying cardiovascular disease such as heart failure, coronary heart disease, cardiac arrhythmia or hypertension.
- Monitor these patients closely for any adverse events, and ensure that resuscitation facilities are readily available.
- All adverse events related to hyoscine butylbromide injections should be reported to the NPRA.

Reference:
<table>
<thead>
<tr>
<th>MEDICATIONS</th>
<th>PREVIOUS BRAND</th>
<th>CURRENT BRAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bupivacaine Heavy Inj</td>
<td>Bupitroy Heavy Inj Manufacturer: Troikaa</td>
<td>Marcain 0.5% Spinal Heavy inj Manufacturer: Aspen</td>
</tr>
<tr>
<td>- Uses: Used for spinal anesthesia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ipratropium bromide 0.5 mcg + Salbutamol 2.5 mcg Neb solution</td>
<td>Duolin Manufacturer: Cipla</td>
<td>Combivent Manufacturer: Boehringer Ingelheim</td>
</tr>
<tr>
<td>3. Noradrenaline 4mg/4ml</td>
<td>Levophed inj 1 mg/ml Manufacturer: Hospira</td>
<td>Biemefrin inj 4mg/4ml IV ampoule Manufacturer: Biem Pharmaceutical</td>
</tr>
<tr>
<td>- Uses: Septic shock and shock where peripheral vascular resistance is low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICATIONS</td>
<td>PREVIOUS BRAND</td>
<td>CURRENT BRAND</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>4. Terazosin 2mg tab</td>
<td><strong>Ralsin 2 mg</strong> Manufacturer: CCM Duopharma</td>
<td><strong>Apo-Terazosin 2 mg</strong> Manufacturer: Apotex</td>
</tr>
<tr>
<td>- Uses: Benign prostatic hyperplasia (BPH), hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Vitamin B1, B6, B12 tab</td>
<td><strong>Vitabion</strong> Manufacturer: Unison</td>
<td><strong>Neurovit</strong> Manufacturer: Hovid</td>
</tr>
<tr>
<td>- Uses: Deficiency or raised requirement of vit B1, B6 &amp; B12.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Acetylsalicylic acid 100mg+ Glycine 45mg tab</td>
<td><strong>Glyprin</strong> Manufacturer: CCM Pharmaceuticals</td>
<td><strong>Cardiprin</strong> Manufacturer: Reckitt Benckiser</td>
</tr>
<tr>
<td>7. Sertraline 50mg tab</td>
<td><strong>Serlift</strong> Manufacturer: Ranbaxy</td>
<td><strong>Aurasert 50</strong> Manufacturer: Aurobindo Pharma LTD</td>
</tr>
<tr>
<td>Uses: Major depression, obsessive–compulsive disorder (OCD), panic disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Rocuronium bromide 10 mg/ml inj</td>
<td><strong>Esmeron</strong> Manufacturer: Merck Sharp &amp; Dohme</td>
<td><strong>Rocuronium-Kabi</strong> Manufacturer: Hameln Pharmaceuticals GmbH</td>
</tr>
<tr>
<td>- Uses: Adjunct to general anaesth to facilitate endotracheal intubation, to provide skeletal muscle relaxation during surgery and to facilitate mechanical ventilation in adults, children and infants from 3 months of age.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug</td>
<td>Prescriber category in MOH drug list</td>
<td>Indication</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vasopressin 20 units/ml Injection</td>
<td>A</td>
<td>Septic shock</td>
</tr>
<tr>
<td>Acyclovir 3% Eye Ointment</td>
<td>A*</td>
<td>Only for the treatment of herpes simplex keratitis</td>
</tr>
<tr>
<td>Permethrin 5% w/v Lotion</td>
<td>A/KK</td>
<td>Treatment of scabies</td>
</tr>
<tr>
<td>Morphine Sulphate 10 mg &amp; 30mg Controlled Release Tablet</td>
<td>A</td>
<td>Prolonged relief of severe pain associated with neoplastic disease; assists in procuring sleep where sleeplessness is due to pain or shock</td>
</tr>
</tbody>
</table>
### Tinzaparin 10,000 anti-Factor Xa IU/ml Inj

<table>
<thead>
<tr>
<th>Prescriber category in MOH drug list</th>
<th>A*</th>
</tr>
</thead>
</table>

**Indication:**
Prevention of post-operative DVT in patients undergoing general and orthopaedic surgery.

**Dosage/ treatment regimen:**
Thromboprophylaxis in patients with: Moderate risk of thrombosis (general surgery): 3,500 anti-Factor Xa IU SC 2 hrs before surgery and postoperatively, 3,500 anti-Factor XaIU once daily for 7-10 days. High risk of thrombosis (eg. total hip replacement): 4,500 anti-Factor Xa IU SC or 50 anti-Factor XaIU/kg body weight SC 2 hrs before surgery and then once daily until the patients has been mobilized.

### Insulin Glulisine 100u/ml injection Pre-Filled Pen 3ml

<table>
<thead>
<tr>
<th>Prescriber category in MOH drug list</th>
<th>A*</th>
</tr>
</thead>
</table>

**Indication:**
Treatment of adults, adolescents and children 6 years or older with diabetes mellitus, where treatment with insulin is required.

**Dosage/ treatment regimen:**
Glulisine should be given shortly (0-15 min) before or soon after meals. Apidra should be used in regimens that include an intermediate or long acting insulin or basal insulin analogue and can be used with oral hypoglycaemic agents. The dosage of Apidra should be individually adjusted.

---

### MEDICATIONS DELIST FROM FORMULARY HOSPITAL SEGAMAT

- Piracetam 1gm/5mL injection
- Thymol gargle
- Drapolene cream
- Ampicillin syrup 125mg/5mL
AN INTRODUCTION TO WARFARIN MEDICATION THERAPY ADHERENCE CLINIC (WARFARIN-MTAC)

INTRODUCTION

- Warfarin is used for:
  - prevent and treat venous and arterial thrombosis and embolism.
- Warfarin can cause life-threatening haemorrhages.
- Patients taking warfarin should have their INR measured regularly.
- More frequent tests are needed when patients start, stop or alter the dose of their medications.
- Educating the patients about warfarin helps them to take their treatment correctly.

OBJECTIVES

1. To assist doctors in the management of patients on anticoagulation therapy.
2. To provide service continuity and enhance patient care on anticoagulation therapy through education, frequent monitoring, and close follow-up.
3. To maximize the benefits of anticoagulation therapy and minimize the adverse effects and complications resulting from anticoagulation therapy.
4. To provide consultative services to healthcare providers on anticoagulant drug management and related issues.

WHAT IS WARFARIN -MTAC?

- Is an ambulatory care service which emphasizes on warfarin therapy management.
- Managed by trained pharmacists
- First started in 2005 in one hospital
- Started since August 2016 in Hospital Segamat
- Service provided:
  - (1) dose adjustment recommendation
  - (2) warfarin therapy counseling
  - (3) warfarin dispensing in the clinic

CLINIC OPERATION IN HOSPITAL SEGAMAT

- **OPERATING TIME:** 9.30am to 12.30pm, every warfarin clinic on Monday
- **LOCATION:** Klinik Pakar 3 (MOPD)
- **Selection of patient:**
  1. All out-patient on warfarin in relevant discipline.
  2. All new cases shall be referred by doctor/ward pharmacist.
  3. The pharmacist shall manage patients with INR within range or subtherapeutic.
  4. Patients with INR above target range and/or with sign and symptom of bleeding or thrombosis shall be referred to a doctor.
  5. At the discretion of the pharmacist, a case with a perceived inappropriateness of therapy will be discussed with the doctor for appropriate management of the anticoagulant therapy.
SEE YOU AGAIN!
FAREWELL TO PUAN NORFARAHEN AND ENCIK HAMDAN

Iftar Perdana Jabatan Farmasi dan Majlis Perpisahan Puan Norfarahen pada 13 Jun 2017
Persaraan Encik Hamdan

Bersama Anggota Farmasi Pesakit Dalam & Farmasi Logistik

Bersama Provisional Registered Pharmacist (PRP) dan Anggota Farmasi Pesakit Luar
Majlis Jamuan Hari Raya Peringkat Hospital Segamat

18 JULAI 2017

Persembahan daripada Provisional Registered Pharmacist (PRP) Hospital Segamat
GRAND CLEANING DAY 2017
AHAD | 21/5/17

TAKLIMAT EKSA & ECHO TRAINING
KUA 2017
SELASA | 18/4/17 & 2/5/17

AKTIVITI-AKTIVITI EKSA JAN-JUN 2017

GRAND CLEANING DAY 2017
AHAD | 21/5/17