

CONFERENCE PROCEEDING

Documentation on Potential Herbal Plant for Snakebite Treatment

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Abstract

Traditional herbs represent one of the efforts that is the most accessible resources available for common ailment treatment among the communities of Northern Malay People at Langkawi. There are 28 type of plants are used for snakebite treatment such as *Andrographis Paniculata*, *Impatiens Balsamina* and *Tacca Palmata* in Langkawi. This study aims to document the indigenous knowledge and practices of using herbs for snakebite treatment among them. Therefore, treatment for the snakebite using traditional herbs is one of the efforts of the scientists. These traditional knowledges are rural people and old folks' knowledge. It can be anytime for the knowledge to be erased from this world because the expecters of this field are slowly diminished due to the uninterested young people to study about these traditional knowledges. Thus, not to lose these knowledges, this study was made by interviewing the experts and jotted down the properties for each plant that are potential to treat the snakebite were meticulously noted. Then, the hypothesis was made based on the result recorded from the previous study. It shows that most of the plants used by the communities of Langkawi have the same properties which are anti-inflammatory and antibacterial activities. This study presents the convenient knowledge of the snakebite treatment using traditional herbs and makes the valuable traditional knowledge is not disappeared in time. This can be a best reference for everyone especially for pharmacological studies in developing snake anti venom.

Keywords: *Traditional herbs, snakebite treatment, anti-inflammatory, antibacterial*

INTRODUCTION

Snakebites are common and frequently happen in the rural area. It is an injury caused by the bite of the snake. Snakebite consists of venom which is the most complex enzyme. It is too dangerous that can cause death. Usually, symptoms are more seen in children because they receive more concentration of venom due to their smaller body (Rita *et al.*, 2011). Snakebites are very dangerous that causes many effects on the human body. Statistic shows that a total of 15,798 snakebite cases in Malaysia have been recorded between year 2010-2014 (Ashar *et al.*, 2018).

Traditional herbs are commonly used by rural people for treatment of all kinds of disease including snake bite. Many plants are recommended in ancestral medicine to fight against the snake bite. The use of traditional medicine is better than modern medicine because it has lesser side effect to our body (Kamboj, 2000). Thus, the

practice in traditional medicine differs among tribes. Therefore, this study aims to document the types of herbal used in traditional medicine by local tribes.

MATERIALS AND METHODS/ METHODOLOGY

Interviewing

This study was conducted in Langkawi, Kedah by meeting with the experts and interviewing them (Figure 1). This interview is focusing on expert and experienced persons by asking them about the potential herbal plants for the snakebite treatment based on their expertise and experiences.

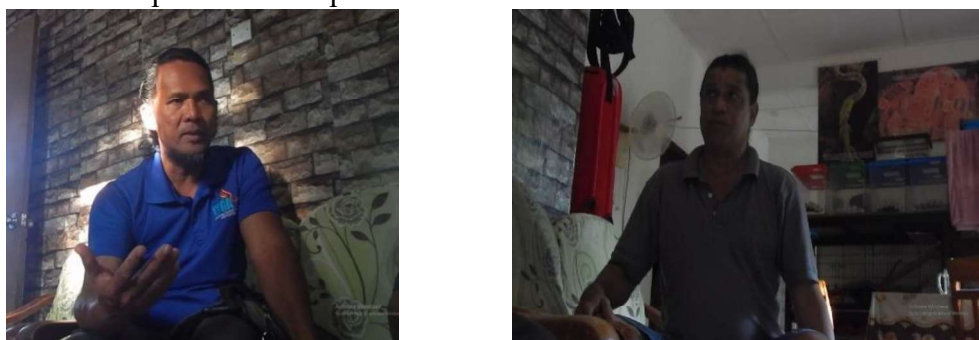


Figure 1. Meeting with the experts at Langkawi Kedah

Data collection

The data from the interview was analysed. Each of the potential plants was documented and supplemented information was searched in the library and other information resources from the previous studies. The properties of each plants were documented to see how the plants contribute in the snakebite treatment process.

RESULTS AND DISCUSSION

The study recorded a total 28 herbal plants species from 22 families used by communities at Langkawi as the snakebite treatment. Besides from being a cure for snake bite, these plants are also commonly used by the Malay to treat common ailments. From the different 28 species herbal plants, most of them have the same properties which are antimicrobial, antifungal, antiviral, anti-inflammatory and antibacterial activities that are potential to reduce the symptoms from the snake bite. The bite with envenoming will have a typical symptom such as leave signs like two puncture wounds, microbial infection, swelling and redness around the wounds, pain at the bite site, difficulty breathing, vomiting and nausea, blurred vision sweating and salivating numbness in the face and limbs.

Among the listed plants, 14 plants were recorded to have anti-inflammatory properties, 15 plants to have antibacterial/antimicrobial/antifungal properties and the rest have other properties. A detail record of the medicinal plants and their properties are presented in Table 1. Anti-inflammatory works to reduce the inflammatory (redness, swelling and pain in the body) while antibacterial or antimicrobial works to

kill or slow the growth of microorganisms in the body (Maroon *et al.*, 2010). Thus, this shows that these herbal plants do not act as antidot but act as a symptomatic treatment by reducing the inflammation at the tissues and organs and also by reducing the infections either from bacteria or virus or fungus. According to (Pal, 2003), the extraction of medicinal herbal plant could be an aid before the patient seeking the doctors. This herbal formulation act as supportive treatment in order to relief the side effect of venom injection. Thus, the venom probably neutralized by body's immune system. Therefore, further investigation needs to be conducted in order to formulate an efficient antidot extracted from herbal plant.

Table 1. List of plant species for snakebite treatment used by communities of Langkawi.

	Scientific Name	Family name	Malay Name	Properties
1.	<i>Adiantum capillus ceneris</i>	Pteridaceae	Pakis Batang Hitam @Venus	Antioxidant, antimicrobial, antiviral
2.	<i>Agalonema</i> spp.	Araceae	Lidah Gajah	Antioxidant, antimicrobial, phytotoxic
3.	<i>Allium cepa</i>	Amaryllidaceae	Bawang Merah	Antivenin
4.	<i>Andrographis paniculata</i>	Acanthaceae	Hempedu Bumi	Anti-inflammatory, antipyretic
5.	<i>Barleria lupulina</i>	Acanthaceae	Setawar Kampung	Anti-inflammatory
6.	<i>Carica papaya</i>	Caricaceae	Betik	Antimicrobial, antioxidant
7.	<i>Chrysopogon aciculatus</i>	Poaceae	Kemunchup	Analgesic, anti-inflammatory
8.	<i>Colocasia esculanta</i>	Araceae	Keladi Hutan	Anthelmintic, anti-diabetic and anti-inflammatory
9.	<i>Donax arundastrum</i>	Marantaceae	Ubi Bemban	Antibacterial
10.	<i>Eupatorium odotarum</i>	Asteraceae	Daun Serunai @ Kapal Terbang	Antioxidant, antimicrobial
11.	<i>Gendarussa vulgaris</i>	Acanthaceae	Daun Gendarusa Hitam	Anti-inflammatory, antidiarrheal, analgesic,
12.	<i>Hedyotis corymbosa</i>	Rubiaceae	Daun Lidah Ular	Anti-inflammatory, antioxidant,
13.	<i>Hibiscus mutabilis</i>	Malvaceae	Bunga Raya Putih	Antibacterial, antioxidant,
14.	<i>Impatiens balsamina</i>	Balsaminaceae	Pokok keembong	Antibacterial, antidiabetic, antioxidant, anti-inflammatory,
15.	<i>Lucaenea leucocephala</i>	Fabaceae	Petai Belalang	Antioxidant, antibacterial, antimutagenic
16.	<i>Loranthus ferrugineus</i>	Loranthaceae	Dedalu Api Merah	Antioxidant, anti-inflammatory, antimicrobial, antiviral, antidiarrhoeal, antidiabetic
17.	<i>Lochnera roses</i>	Apocynaceae	Kemunting Cina	Antioxidant
18.	<i>Lygodium flexuosom</i>	Lygodiaceae	Paku Pakis Pemanjat	Antibacterial, antioxidant, anti-inflammatory
19.	<i>Melodorum cylindrium</i>	Annonaceae	Pokok Tepak	Anti-inflammatory
20.	<i>Mesua ferrea</i>	Calophyllaceae	Penaga Lilin	Antioxidant, antibacterial, anticancer
21.	<i>Peristrophe acuminata</i>	Acanthaceae	Setawar Ular	Anti-inflammatory, anthelmintic, antimicrobial, antioxidant, anti-arthritis, antidiarrhoeal, analgesic
22.	<i>Rauwolfia perakensis</i>	Apocynaceae	Buah Pelir Kambing	Antivenin

23.	<i>Rhodomyrtus tomentosa</i>	Myrtaceae	Bunga Ros Myrtle	Antioxidant, antifungal, antibacterial, anti-inflammatory, antimalarial
24.	<i>Strychnos ligustrina</i>	Loganiaceae	Bedara Laut	Anti-inflammatory
25.	<i>Tacca palmata</i>	Taccaceae	Gadung Tikus	Analgesic
26.	<i>Tamarindus indica</i>	Fabaceae	Biji Asam Jawa	Anti-inflammatory
27.	<i>Tinospora tuberculata</i>	Menispermaceae	Akar Seruntum	Antimicrobial
28.	<i>Vernonia cinerea</i>	Asteraceae	Sawi Tekukur	Anti-inflammatory, antidiabetic, anticancer, Antiviral, antimicrobial

CONCLUSION

A total of 28 species of herbs and medicinal plants used traditionally as medicine by the indigenous people in Langkawi were inventoried and documented. Most of the plants that are used to cure snakebite have anti-inflammatory and antibacterial properties. The information collected from this study are precious sources for the future development of snake antivenom.

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