Proceedings
International Seminar
Studies on Bali Dog:
Genetics, Culture, Diseases,
Zoonoses and Community Health

Postgraduate Master Program of Public Health
Faculty of Medicine
&
Udayana One Health Collaboration Center
Udayana University
Denpasar, 31st March - 1st April 2017

PROCEEDINGS

International Seminar

Studies on Bali Dog:
Genetics, Culture, Diseases,
Zoonoses and Community Health

Postgraduate Master Program of Public Health Faculty of
Medicine & Udayana One Health Collaboration Center
Udayana University

Denpasar, 31st March – 1st April 2017

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BACKGROUND

The indigenous Bali Dog (*Anjing Bali*) has coexisted with the Balinese for thousands of years, probably arriving on the island with some of the earliest waves of migrants from mainland Asia. The Bali Dog has long played an important cultural and ecological role, guarding household compounds and temples from human and spiritual intruders; helping keep pests including rats, snakes and marauding monkeys away from crops and households; and helping to manage waste on the island by eating the refuse thrown away by Bali’s inhabitants. Dogs feature prominently in several Hindu stories, and are held up as an example for humans of faithfulness and steadfastness. Culturally, there is an elaborate traditional categorization of Bali Dogs based on temperament, color, measurements, and tail shape. Smart, loyal, hardy and sociable, they have been an integral element of Balinese communities for thousands of years.

Genetic research has determined that the Bali Dog is one of the world’s oldest dogs, sharing DNA with several other Austral-asian dog breeds, including the Australian Dingo, Japanese Akita and Chow-chow. Until the recent introduction of pure-bred and mixed breed dog imported from Java and elsewhere, the Bali Dog, both the highland Kintamani and the lowland short-haired, had unadulterated genetic lineages estimated to be between 10 and 15 thousand years old. This rich genetic heritage is a priceless resource for biologists, animal geneticists and animal behavior experts who continue to do research to understand how dogs evolved, and how humans and dogs developed their unique relationship.
The Bali Dog is underappreciated both in terms of its singular genetic identity, and because it is considered of no value and low status compared to pure- and mixed-breed dogs that command high market prices. Its long-term existence is also currently under threat because of several factors, including the dog meat trade, the endemic rabies epidemic, and the preference for breed dogs among Balinese.
PREFACE

Postgraduate Master Program of Public Health Faculty of Medicine and One Health Collaboration Centre Udayana University, Supported by International Fund for Animal Welfare United States and Bali Animal Welfare Association held an International Seminar about Studies on Bali Dog in 31st March – 1st April 2017 to disseminate results of national and international research on the Bali Dog, to publish its uniqueness as well as to discuss what can be done to address the threats to the continued existence of this neglected element of Bali’s heritage
EDITORIAL TEAM

1. Dr. drh. I Made Subrata, M.Erg
2. dr. Ni Wayan Arya Utami, M.App.Bsc, Ph.D
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4. Sang Gede Purnama, SKM, M.Sc
5. Drh. Kadek Karang Agustina, MP
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7. Gede Padmanabha, SKM
8. dr. Pande Putu Januraga, M.Kes, Dr.PH
9. Dr.dr. Ni Nyoman Sri Budayanti, Sp.MK(K)
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11. Kate Nattrass Atema DVM, M.Sc
12. Dr. Elly Hibi
13. Ellie Milano M.Sc
14. Janice Girardi
15. Abby Ruddick
16. Corlevin Kalalo
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ANALYSIS OF RABIES CASES ON HUMAN IN BULELENG REGENCY
PERIOD FROM 2010 TO 2016

I Wayan Suardana¹*, Syinthia Arya Novianti², I Wayan Batan³

¹Lab of Veterinary Public Health, ²Undergraduate Student, ³Lab of Veterinary Clinical Diagnostic, Faculty of Veterinary Medicine, Udayana University, Jl. PB Sudirman, Denpasar-Bali.

*E-mail: wayan_suardana@unud.ac.id

ABSTRACT

Rabies is a contagious disease that is still a problem in Indonesia especially in Bali. The incidence of rabies in Bali particularly in Buleleng regency highly. According to the recorded of health official of Bali in 2010, as many as six cases of human were founded positive after bitten by the dog infected with rabies virus. The research aim to describe the development of human rabies in Buleleng for period of 2010 to 2016. In addition, the research also wants to know the pattern spreader of rabies in Buleleng, and made a map of the rabies in Buleleng. The research was conducted by collection of secondary data originated from health official of Buleleng ranging from years 2010 to 2016, followed by analysis using SPSS 12 program. The results showed, as many as 12 people were positive in the period time of observation. The rabies case was known spread in the most area of Buleleng and the case has been decrease from year to year.

Keywords: Buleleng regency, human, rabies.

INTRODUCTION

In Indonesia, rabies is very important zoonotic disease. The disease is caused by Lyssa virus that is classified as family of Rhabdo viridae. Rabies disease attacks warm-blooded animals including humans. Animals like dogs, cats, and monkeys are known as an main reservoirs (Jackson, 2002).
Infection by this agent caused death resulted by the virus infection through the central nervous system of the brain and spinal cord. Its transmission usually occurs through the bite of an animal infected to healthy animals or human (Dodet et al., 2008).

In Bali, rabies cases for human were firstly reported in November 2008 in Ungasan Village, Kuta District. This incident indicates that the Bali island is no longer as a rabies-free area. As a tourist destination both nationally and internationally, Bali island can provide a wide impact originated from rabies case including health status, economic, social and cultural aspects to security and public health. Rabies can promote the decrease of tourist visit as a result of convenience of tourists visiting Bali.

Buleleng regency as a wide area with a dense population in Bali has a strategic potency to spread of rabies. These characteristics make Buleleng regency has an important role to the development of tourism, so that the information about the development of rabies case on human in this area will be have important meaning to be revealed.

**RESEARCH METHODS**

**Sample collection**

The data used in this study were collected from several related government institutions such as the health office of Bali Province, and health office of Buleleng Regency. The study also completed by field survey in the area that reported.

**Research procedure**

The study began by collected of secondary data human rabies ranging from 2010 to 2016. The data obtained from several institution and filed survey were continuously compiled and analyzed.

**Data Analysis**

The data were analysed descriptively followed by mapping of incidence.
RESULTS AND DISCUSSIONS

Based on the rabies incidence data obtained in Buleleng Regency from May 2010 to November 2016, the rabies cases in humans were showed in Table 1.

Table 1. Rabies cases per areas in human in Buleleng regency for period 2010 to 2016

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Source: Health office of Buleleng Regency

The data in Table 1 were described in the form of graph (Figure 1).

The data in Table 1 showed the first and the highest rabies case in human in Buleleng regency were found in 2010. The cases were also founded decrease every year until 2016. The first incidence of human rabies in Buleleng regency as a result of the rabies case was not predicted previously. The island of Bali considered a rabies free area. Generally, human infected by rabies virus through the bite of infected animals. The rabies virus is located in the saliva of an infected animal. Saliva becomes infectious by 3 to 5 days post infection. The virus travel from the bite of
infection along the peripheral nerves to the CNS (Kraus et al., 2003).

![Graph showing human rabies cases from 2010 to 2016]

Decreasing of rabies case in 2011 until 2012 as a result of successfully of vaccination program that were conducted by local government of Buleleng regency especially for the local health official. The decrease of human rabies also resulted by successfully of vaccination program in animals. The lower or negative case in animals will affect the lower or negative case in humans. This phenomenon is derived from animals as the main reservoir and human as the dead end of rabies. Stray dogs transmit the disease and serve as virus reservoirs (Acha et al., 1987; Kraus et al., 2003).

Detected rabies case in 2013 until 2015 again as a result of non-completion of vaccination programs in animals and humans before. Dibia et al., (2015) in their study revealed that factors associated with rabid dog were the status of rabies vaccination ($X^2 = 55.538; P = 0.000; OR = 19.133; 95\% CI = 8.015<OR<45.678$), contact with other dog ($X^2 = 43.659; P = 0.000; OR = 12.551; 95\% CI = 5.541<OR<28.430$). Rabies cases also predicted due to the displacement of rabies suspects from outside of Buleleng. People bitten by animals rabies suspect migrate to Buleleng and rabies cases finally detected in the new area. (Vahdati et al., 2013) asserted that the lack of public attention to rabies vaccination leads of the death of people with rabies infection. The results of this study indicate that in order to decrease of rabies cases in humans it is needed the active participation of
the community to always care about the dangers of rabies and regular vaccinations of their animals.

CONCLUSION

As many as 12 people were positive rabies in periode 2010 to 2016. The disease spread in the most area of Buleleng but the incidence is decreased from year to year.

REFERENCES