

Investigation on animal and human rabies in cases from Mazandaran and Golestan provinces referred to the Amol Research Center, Northern Iran in 2003–2005

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Citation

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Abstract

Rabies has been endemic in Mazandaran and Golestan provinces for long time and it was a cause of some outbreaks of disease in the north of Iran especially in Golestan province. This study has been carried out in northern part of Iran for three years from 2003 to 2005. Eighty six animal bite cases were investigated and out of them, %20 was female and %80 was male. Average ages of samples were 26.5, 32 and 29.3 among female, male and in all samples respectively. According to the location of bites, 48 cases (%55.8) were in hands, 26 cases (%32.2) in feet, 11 cases (%12.8) in body and one case (%1.2) in head. Animals were involved in biting were dog (%73), mouse (%6), cat (%5), cow and jackals (%3.5), donkey (%2.5) and fox, sheep, tiger (%1.3 each). Results of immuno-fluorescent assay revealed that 36 out of 86 dogs, 0 out of 5 mice, 0 out of 4 cats, 2 out of 3 Jackals, 3 out of 3 cows, 1 out of 2 donkeys, 1 out of 1 sheep, 1 out of 1 fox and 0 out of 1 tiger were positive. In this study, data analysis indicated no human cases of rabies in the collected samples. The results confirmed a high prevalence rate of animal form of rabies in northern district of Iran, which is required an extra precaution strategy.

INTRODUCTION

Rabies is severe and fatal encephalitis caused by bite of infected animals. This is a health problem especially in the eastern Mediterranean countries (1). Infection is started by a virus from the Rhabdoviridae family, genus Lyzzaviruses and class Mononegavirales (11). The virus is sensitive strong acids and bases (14). Transmission is occurred by animal saliva by any form of skin injuries (bite, scratch, or cut) (16).

The incubation period of disease is reported to be at least 10 days and at last 5 years in Iranian cases (18). The pathogenesis of disease is commenced by entrance of viruses to the nerve cells (15) and spread out among body, however no viruses have been found in blood and stool of patients (17).

According to WHO reports, ten millions of people are bitten by animals around the world, considered for prophylaxis and treatment against rabies and almost 50,000 people die from this disease annually (1, 2). The highest rates of mortality and morbidity in Asia are observed among developing countries including Bangladesh, Pakistan and India. The real rates of

infection are also doubtful in above countries (3).

This will assist to design a new strategy for prevention in different areas of Iran. According to statistics the number of rabies infected cases is seven times higher in men than women (5). In a study in 1997 in Mazandaran province, the majority of bites were reported in feet (6). In another study between 1981 to 1985 in districts of Caspian sea and Persian Gulf, foot and hand infections were %46.2 and %33.4 respectively (8). Between 1995 to 1999 %88 of human biting was reported in male (7). According to data reported by Pasteur Institute of Iran in 2003, the number of anti-rabies treated cases were 99,861 in Iran; from the 88,466 people (%5.9) were bitten by dog (5). WHO in 1997 published an eradication report of rabies in 56 countries in the world (13). Although the number of injured and suspected person are increasing in recent years, the treatment strategy is also expanding, e. g. in 1998 the number of treated people were 65,632 (8, 9).

MATERIALS AND METHODS

Human cases were referred to Amol Research Center (ARC,

Pasteur Institute of Iran, Amol, Mazandaran, Iran(from Golestan and Mazandaran provinces. The collected data were statistically analyzed using descriptive softwares.

RESULTS

Results of this study are indicated no human cases of rabies in Gilan and Mazandaran provinces. From 86 animal bites, %20.9 was women and %79.1 was men. The average age in women was 26.5, in men 32 and in total 29.3 years old. All 48 cases (%55.8) of injuries were occurred in hands, 26 cases (%30.2) in foot, 11 cases (%12.8) in body and 1 case (%1.2) was observed in head. According to seasonal distribution, 17 cases were occurred in spring, 27 cases in summer, 18 cases in autumn and 22 cases in winter.

DISCUSSION

According to studies were carried out by the Department of Rabies, Pasteur Institute of Iran, the number of anti-rabies treated people was increased from 1990 to 2002 (4, 5). People awareness and their contribution were also increased significantly (12).

There are some reasons could explain seasonal variation rates of disease including; a) In the winter the wild animals immigrate from highlands to the human residential areas for food. b) In the warm weathers the biting increases including %75 in dogs, %6 in mice, %5 in cats, %3.5 in cow and jackals, %2.5 in donkeys and %1.3 in other animals.

Rabies as a dangerous disease is expanding due to the high number of stray dogs and human cases of dog biting (19). However, it is surprising; no cases of human rabies were reported in northern provinces of Iran during last tree years. This is because of increasing people knowledge and upgrading of health and treatment centers. The high rate of disease was observed in male, which is related to more contact and availability in natural fields. It is emphasized here the importance role of dogs for transmission of rabies in Iran. This study also clarified some epidemiological aspects of disease in the Northern part of this Middle Eastern country.

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