

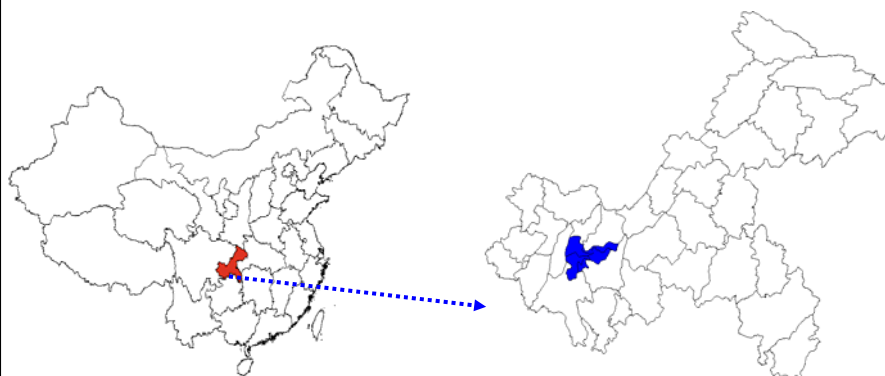
Effectiveness of Rabies Post-Exposure Prophylaxis During a Rabies Outbreak in Chongqing City, China

RuanFeng

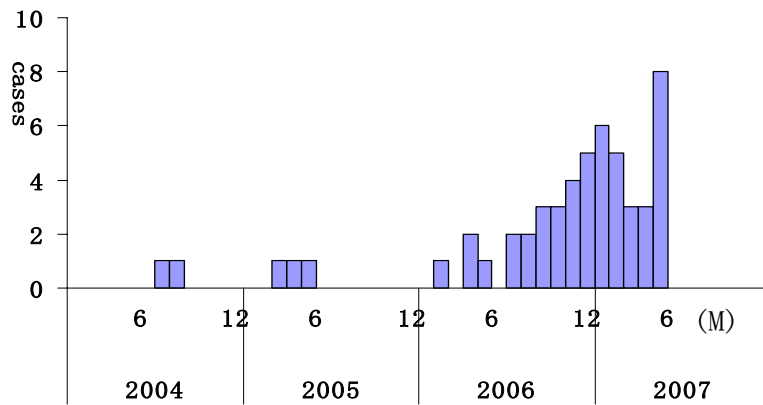
Chinese Field Epidemiology Training Program
China CDC, Beijing



- **Located in southwest China**
- **Population: 30 millions**
- **40 administrative districts and counties**



Human Rabies Steadily Increased Since 2004



Rabies cases distribution in chongqing (2004-may2007)



97% cases happened in rural areas

Age and Gender Distribution

Age	Males (N=36)	Females (N=17)	Total (N=53)
	%	%	%
1-10	28	11	40
11-20	8	0	8
21-40	11	6	17
41-60	15	8	23
>60	6	8	13

Objectives

- Estimate effectiveness of post-exposure prophylaxis.
- Recommend prevention measures.

Case Definition

- **Onset of sensory or motor central nervous system dysfunctions, followed by death in < 2 weeks.**
 - **Dysfunctions: apprehension, excitability, aerophobia, hydrophobia, delirium or convulsions.**

Selection of Cases and Controls

- **Source of Data:**
 - **Animal Bites Registry;**
 - **Rabies cases reported to Notifiable Disease Reporting System from 2004 to May 2007.**
- **Controls: Survivors after known exposure**
 - **Bitten or scratched by same animal as case;**
 - or**
 - **Bitten or scratched by a proven rabid dog**
- **53 cases and 75 controls were chosen**

No Significant Difference in Type of Exposure Between Cases and Controls

	%	
	Case (N=53)	Control (N=75)
Bitten	96	91
Scratched	3.8	9.3

Severity of Exposure Between Cases and Controls

Category	N		%	
	Case	Control	Case	Control
II	10	16	18	21
III	43	59	82	79

Risk Factors for Developing Rabies

	N		%		OR	95%CI
	Case	Control	Case	Control		
Bitten or Scratched on the head	16	2	30	2.7	16	3.2-105
Wound not treated	35	20	66	27	5.4	2.3-12
Not vaccinated	39	14	74	17	15	5.7-38

Vaccination and site of wound strongly associated with Developing Rabies

	OR	95%C.I
Bitten or Scratched on the head	78	13-481
Wound not treated	0.9	0.2-3.5
Not vaccinated after exposure	50	100-1000

Vaccine failure strongly associated with being bitten or scratched on the face, hands, or arms

Exposure site	% of vaccinated cases (N=14)	% of vaccinated controls (N=62)	P
Face, hand or arm	100	29	<0.01
Other	0	71	

Protection rates were similar between vaccine only and vaccine plus human rabies immunoglobulin

5 doses of rabies vaccine	Human rabies immunoglobulin	Cases	Controls	OR	Protection rate (%)
+	+	1	17	0.02	98
+	-	3	45	0.02	98
-	+	0	0	-	
-	-	39	13	-	

Conclusions

- **5-dose series of rabies vaccine was effective for rabies prevention**
- **Vaccine failure strongly associated with being bitten or scratched on the face or hands .**

Recommendations

- **Determine reasons for failing to initiate rabies vaccination**
- **Educate public to initiate and complete prophylactic vaccination after animal bites.**
- **Determine reasons for vaccine failure after being bitten on the face and hands**

Strengths

- **Large number of rabies patients enrolled**
- **Enrolled persons known to have been exposed to rabid animals as controls**

Limitation

- **Reasons for lack of post-exposure vaccination was not investigated**
 - **Cost of vaccine?**
 - **Transportation difficulties?**

Acknowledgement

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THANK YOU

Vaccine failure strongly associated with being bitten or scratched on the face or hands

exposure site	cases	controls
face	10	2
hand	2	14
arm	2	2
Other	0	44

The reasons dog hurt human

reasons	cases		controls	
	n	%	n	%
assault	35	66	69	92
defend	5	9.5	5	6.7
amusement	7	13	1	1.3
others	6	11	0	0

Vaccination in different age group

age	cases		controls	
	n	%	n	%
-10	8	57	19	25.3
-20	1	7.1	9	12
-40	3	21	14	18.7
-60	2	14	17	22.7
60-	0	0	4	5.3