

Investigation of post vaccination effects temporally associated to rabies vaccination campaign of dogs and cats at São Paulo Municipality, SP, 2010.

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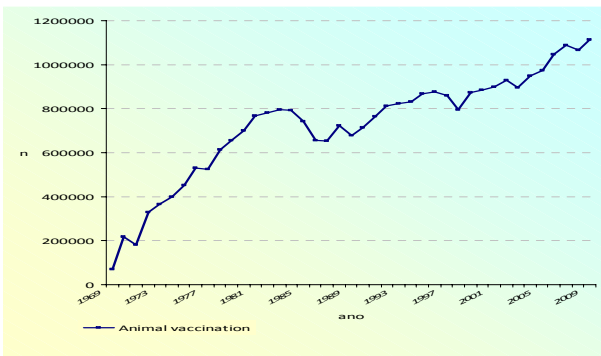
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Introduction

Dog and cat rabies vaccination are recorded at São Paulo Municipality since 1969, when there were 989 animal and 5 humans rabies cases. Until 1973 human rabies increased 2.2 times, vaccinated animals increased 5 times and rabid animal decreased, reaching 56% of the total registered in 1969. Animal rabies vaccination was always emphasized within the national rabies control program focusing disease control and respectively from 1981 and 1983 no rabies cases in human or dog and cat were recorded. Historically it has been observed more population adhesion, promoted by health services, which allows increasing animal vaccination coverage, focusing human protection against rabies. With the advent of tissue culture, safer, more potent and effective vaccines have been produced. So it is expected decrease of adverse effects and immune response to be prolonged. São Paulo Municipality rabies animal vaccination campaign duration is estimated in 13 to 14 days. In 2010 the vaccination campaign against rabies for dogs and cats of São Paulo began on day 16 and was maintained until the 19th of August. Vaccine used was BHK Raipet, in 197,140 dogs and 50,410 cats. Since the second campaign day there were higher notification of adverse effects on vaccinated dogs and cats.

Animal Vaccination at Municipality of São Paulo, from 1969 to 2009.



Human and Animal Rabies Cases, at the Municipality of São Paulo, from 1969 to 1983.

year	Human Rabies	Animal Rabies
1969	5	989
1970	8	591
1971	8	643
1972	12	573
1973	11	553
1974	5	299
1975	4	200
1976	0	195
1977	4	292
1978	3	209
1979	2	146
1980	0	86
1981	3	76
1982	0	16
1983	0	4

Methodology

Notifications were received by the Center for Zoonosis Control/Coordination on Health Surveillance (COVISA), by phone, according to orientation stamped in vaccination certificates given to owners during the campaign. Due to this higher number in comparison to previous years it was necessary to establish a better recording system. A descriptive study of spontaneous reports received in the CCZ within 30 days following the termination of the campaign against rabies in São Paulo in 2010. It was also picked up cases who attended or were admitted to the CCZ, as well as all episodes were investigated to death. Data were compared with vaccination adverse effects of previous years. During these four days 247,550 animals were vaccinated, 19% of the expected.

Incidence of Adverse Effects in Dogs and Cats, at Municipality of São Paulo, 2005 a 2010.

year	dogs		incidence	cats		incidence
	dogs	cats	adverse event X 1,000	adverse event	X 1,000	
2005	856.010	125.188	59	0,0689	3	0,0240
2006	898.927	148.453	29	0,0323	1	0,0067
2007	914.741	173.865	57	0,0623	4	0,0230
2008	879.405	187.255	65	0,0739	4	0,0214
2009	892.378	221.152	51	0,0572	2	0,0090
2010	197.140	50.410	707	3,5863	1,791	0,0355

Lethality of Total Cases of Adverse Effects in Dogs and Cats, at Municipality of São Paulo, 2005 a 2010.

year	lethality X		lethality	
	dogs	1,000	cats	X 1,000
2005	4	0,004673	0	0
2006	2	0,002225	0	0
2007	9	0,009839	3	0,01725
2008	1	0,001137	0	0,00000
2009	5	0,005603	1	0,00452
2010	26	0,131886	12	0,23805

Results

There were notified 2,498 adverse effects, with an incidence of 3.6/1000 for dogs and 35.5/1000 for cats. Mortality was 0.15/1000 for dogs and 0.35/1000 for cats and lethality among severe cases was 12.7% for dogs and 2.6% for cats. Early detection of adverse effects allowed systematic investigation and supported managers' decision. Municipal campaign suspension aimed to preserve campaigns credibility as the most important strategy for human rabies prevention.



Cat with intestinal bleeding



Cat with severe prostration



Dog with severe prostration and dehydration, interned and treated at the CCZ



Animals with adverse reactions to the rabies vaccine interned and treated at CCZ

Conclusion

The occurrence of adverse effects temporally related to vaccine was considered unexpected and constituted an emergency in public health. This event showed the need of reviewing legislation, normalization and recommendations for production and register of veterinary vaccines in Brazil, in order to guarantee their safety, and to organize surveillance of animal adverse effects. Considering public health campaigns and human rabies protection, it is important to achieve sufficient dogs and cats vaccination coverage to keep disease under control. It is imperative to maintain pet owners' collaboration, and high incidence of severe and moderate adverse effects that may discourage this behavior, as observed in this study, are undesired.