

Technological Forecasting use of Vaccine How to Prevent Canine Visceral Leishmaniasis

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Abstract—Canine Visceral Leishmaniasis (CVL) is a disease caused by parasites, responsible for the significant increase in morbidity and mortality in the worldwide, becoming a serious public health problem. This disease affects both human and other animal species, more specifically the dog (reservoir of the disease). There are several methods of control, the vaccine is one of the most effective when used with other preventive measures. This study addressed the technological forecasting vaccine against canine visceral leishmaniasis, on the basis of national and international patents in order to characterize the research and / or studies being conducted with the use of the vaccine, especially noting an increase in deposits patent in the United States of América. O purpose of this research was to show the technological advancement of the use of the vaccine against leishmaniasis.

Keywords—Leishmaniasis, Visceral, Canine

I. INTRODUCTION

CANINE visceral leishmaniasis (CVL), or kala-azar, is a zoonosis large impact on health public, characterized by high morbidity and mortality. It is a zoonosis infectious and parasitic whose main characteristic, and engages its control, diversity epidemiological, due to the large species variability hosts and reservoirs, vector and features environmental that interact enable maintenance diffusion the disease [1].

In Brazil, the etiologic agent is Leishmania (Leishmania) chagasi. The parasites are transmitted by insect bites called sandflies [2]. The dog is considered the main reservoir domestic CVL. This species characterized as a source effective transmission by cohabiting with people and, often, experience high levels infection without a apparent clinical [3].

Some preventive measures, repellent products such as to ward off mosquitoes and, so, prevent the dog is chopped, are also effective for the control of leishmaniasis, and land clearing, prevent accumulation of trash and use of insecticides the environment [4]. Use of insecticides topics in lotions or incorporated into collars [5].

Among the alternatives found to prevent this purpose, is the use of the vaccine recognized as a measure prevention in the fight against Canine Visceral Leishmaniasis.

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The present study prospecting aimed verify progress and technological research being made on the vaccine as prevention Canine Visceral Leishmaniasis.

II. DESCRIPTION OF TECHNOLOGY

The development of a effective vaccine against Leishmaniasis has been the subject of many studies in recent years, which have been trying develop measures control more accessible efficient against this disease.

In this search, the first vaccine against Canine Visceral Leishmaniasis has recently been licensed in Brazil and in 2003 was registered at the Ministry of Agriculture, Livestock and Supply (MAPA), can therefore be seen as the newest tool for the prevention of leishmaniasis.

The vaccine blocks transmission, so, protects dogs from infection and the condition of, blocking, thus, transmission for sandflies. Thus, the development vaccine, together with other measures control, can be used prophylaxis and disease control.

The vaccine should be applied in three doses, at intervals of twenty-one days between applications. The replication of the vaccine should happen after one year first dose, is necessary applications that do annually to maintain immunity. It is noteworthy that the dog only be protected after twenty-one days the last dose.

III. SCOPE AND METHODOLOGY

This technological forecasting was developed from the query the database National Institute of Industrial Property (INPI)Brazil and the base European Patent Office (ESPACENET). The survey was conducted with the keywords leishmaniasis (Leishmaniasis), vaccine and leishmaniasis (Leishmaniasis vaccine) and canine leishmaniasis (canine leishmaniasis), found in the "summary" in the case of the INPI and in the field "Keyword(s) in title or abstract" in the case of ESPACENET. Since the article was used in leishmaniasis (Leishmaniasis).

According to Table I, were found in 255 documents in total based European Patent documents 79 and based on national. For the keyword leishmaniasis in the field Keyword (s) in title or abstract were obtained for ESPACENET 218 documents, already in the field summary for INPI found 58 documents. Adding the keyword vaccine there was a reduction of the documents. Substituting the word vaccine for canine was a significant decrease.

TABLE I

TOTAL DEPOSITS INVESTIGATED ON THE BASIS OF THE PATENT ESPACENET AND INPI

KEYWORDS	ESPACENET	INPI	TOTAL
Leishmaniasis	218	58	276
Vaccine and Leishmaniasis	25	12	37
Canine Leishmaniasis	12	9	21
Total	255	79	334

IV. RESULTS AND DISCUSSIONS

We calculated the results of technological forecasting based on European Patent Office because it was a worldwide basis. So the national basis of the INPI has been used only to show the amounts of national patents.

The research performed in Espacenet showed an increase in deposits by countries, especially in the United States of America with 103 applications, as shown in Figure 1.

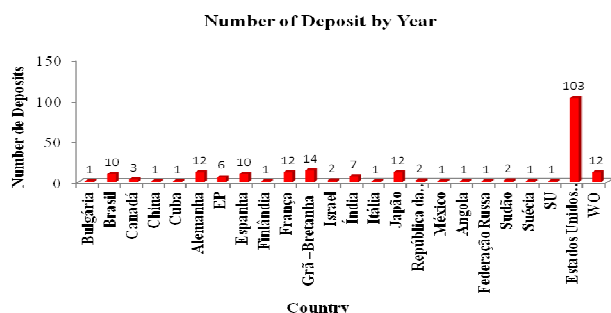


Fig. 1 Number of deposits based on European countries

Also noteworthy is the year when there was a greater number of deposits was 2002, followed by the year 2005 and 2009 as shown in Figure 2.

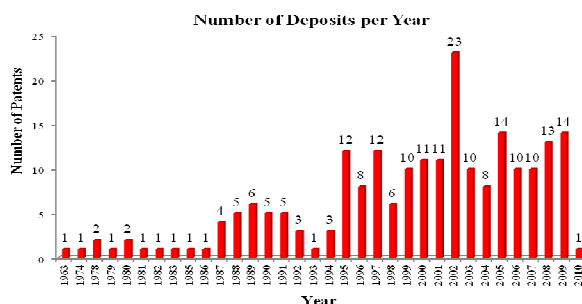


Fig. 2 Number of deposits per year

Besides having a search done with the deposit number per country per year, was also selected companies that stood out in relation to the number of patent filing, in which case the company was Corixa Corporation (U.S.), as shown Figure 3.

COMPANIES EXCELS IN THE NUMBER OF DEPOSITS PATENT

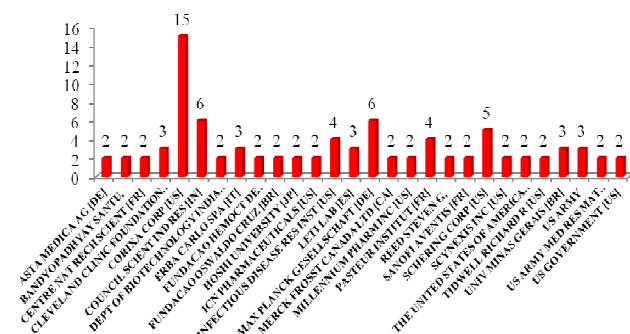


Fig. 3 Companies that have excelled in number of patent applications

V. CONCLUSIONS

The results obtained in this study, we conclude that, in the case of vaccine against leishmaniasis, there is a strong technological advancement, and the United States the country with the largest number of patent applications. Since the number of deposits per year was a particularly significant increase in 2002. Thus, it is believed that the use of a vaccine against leishmaniasis is an important measure of prevention and a good field of research and development in technological innovation. However, this precaution helps to reduce the disease, and above all, to reduce the euthanasia of dogs in our country.

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