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Use of BioAlberic method for treating diabetes mellitus in domestic dogs

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The authors B. Hughes, D. Gonzalez and J.A. Ramirez are members of the research group that develops the BioAlberic program in Cuba

Acronyms
DM: diabetes mellitus

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ABSTRACT
Diabetes mellitus is a common disease in domestic dogs, in which cardiovascular system disorders may occur, and these are difficult to treat. One of the alternative ways of treatment in these animals could be the use of BioAlberic method. This article presents the results of the application of this method (with the Rapsul product) at the beginning of treatment of diabetes mellitus in two domestic dogs, as part of the research process of our group to develop BioAlberic products and evaluate their effectiveness.
Key words: BioAlberic, Rapsul, Diabetes mellitus, Dogs

Empleo del método BioAlberic en el tratamiento de la diabetes mellitus en caninos domésticos

RESUMEN
La diabetes mellitus es una enfermedad frecuente en los caninos domésticos, en la cual pueden presentarse alteraciones del sistema cardiovascular, difíciles de tratar. Una de las vías alternativas de tratamiento en este tipo de animales pudiera ser el empleo del método BioAlberic. En este artículo se presentan los resultados obtenidos en la aplicación de este método (con el producto Rapsul) al iniciar el tratamiento de la diabetes mellitus en dos perros domésticos, como parte del proceso de investigación de nuestro grupo para desarrollar los productos BioAlberic y evaluar su efectividad.
Palabras clave: BioAlberic, Rapsul, Diabetes mellitus, Caninos

INTRODUCTION

Diabetes mellitus (DM) is a common disease in domestic dogs[1]. In the Cuban capital it is the most common endocrinopathy that are seen in veterinary clinics. Its treatment is difficult in terms of availability, application method and

time to achieve control of the disease[2].

Treatment of DM is designed to achieve metabolic control, prevent or delay complications and improve the quality of life of diabetic dogs. In this species such treatment requires a series of instructions on diet, exercise regimen, the practice of hysterectomy of the ovaries and administration of drug treatment (oral hypoglycemic agents) or insulin[3,4]. In most cases insulin is the therapy of choice, which is applied by subcutaneous injection once or twice daily, depending on the type of insulin available, throughout life. This has the disadvantage that lipodystrophy may occur at the injection site, and that it can be painful and annoying for the animal and inconvenient for the owners[5].

In seeking treatment solutions, the application of an alternative that would be effective was considered. It would be economically and ecologically viable, noninvasive, easy to apply, available and with no side or secondary reactions or pain. The selected alternative was the BioAlberic method, which is being developed in Cuba[6,7]. By this method products are obtained by techniques that capture the vibrations emanating from living organisms and are used therapeutically in the control, eradication or recovery of several diseases[8].

BioAlberic is a registered trademark in Cuba. Its application has been tested in previous exploratory studies developed in obese and diabetic domestic dogs that have been assisted in veterinary clinics[9,10] with favorable and encouraging results. For this reason it was decided to continue with its application.

The purpose of this paper is to show some results obtained in clinical situations with the use of the BioAlberic Rapsul product in domestic dogs, when diagnosis of DM is reached and treatment is began.

CASE REPORTS

Case 1

12-year-old obese Pekingese dog which presented the characteristic signs of DM for over 40 days: polydipsia, polyphagia, polyuria, decreased body weight and state of fatigue. 13 kg of body weight, more than double the standard of its race.

A thorough clinical examination was performed and a medical history was made in detail.

Procedure

The animal, in fasting state, was placed on a stretcher and underwent the first blood test to determine glycemia at baseline. After confirming the diagnosis, the Rapsul product of BioAlberic, on paper format (card) in the abdominal area, and glycemia value was reassessed at 60 and 120 minutes after the first blood test.

The determination of glycemia was performed by the glucose oxidase method[11, 12], and that between 4.1 to 6.6 mmol/L[11,13] was established as physiological range.

In this case there was no significant variation in glucose levels in the period of time evaluated (Table). There were indications on diet, exercise regime and the need for decreased body weight, and daily determination of glycemia or glycosuria was recommended, but monitoring failed as the animal died a few days later.

Case 2

14-year-old mongrel dog, also obese (body weight 12.5 kg), that presented the characteristic signs of DM over the past 35 days: polydipsia, polyphagia, polyuria, and fatigue state, as well as cataract.

The procedure used was similar to that of the previous case; a significant variation of glycemia levels at 60 and 120 minutes (Table) was not achieved either. In this case instructions on diet, exercise regimen, and need for decreased body weight and daily measurement of glycemia or glycosuria were also made.

Within five days of the start of the exercise regimen and food rearrangement, a slight improvement in the health of the animal began to be noticed, it was livelier and less down, and within 10 days a decrease polydipsia, polyphagia and polyuria were noticed, and its overall condition continued to improve and was more active. Glycosuria by Benedict's qualitative method varied gradually from orange to green color, and there was a decrease in body weight from 12.5 to 10.0 kg.

In a re-assessment at 15 days, the same procedure was repeated with blood samples and application of the Rapsul product of BioAlberic. This time the results did show an effective response after application of the treatment, as glucose levels decreased significantly, especially in the interval between baseline determination and the first hour (Table).

COMMENTS

In both cases the diagnosis was established by signology and laboratory confirmation (fasting plasma

Table. Glycemia levels (mmol/L) during the evaluation period.

Samples	Glycemia (mmol/L)		
	Basal	1 hour	2 hours
Case 1 - Consultation	11,50	11,00	11,00
Case 2 - Consultation	12,78	12,50	12,45
Case 2 - Reconsultation	18,10	13,30	12,90

glucose) 11-13, and the procedure was the same in each of them.

In the first case, instructions were not followed properly and the animal died. Maybe even if instructions had been followed it was too late and the complications of DM would have been equally fatal, however, the lack of response to treatment may be due to the expression of a state of insulin resistance, as the animal was very obese (13 kg exceeds twice the standard weight of its race that is 2-6 kg, according to the Canine Encyclopedia14), and it has been demonstrated that obesity is associated with a state of insulin resistance15, 16.

Body weight in the second case was also excessive (12.5 Kg). Body weight reference values for this race were taken from the clinic where the study was conducted, since the literature does not describe values for this genetic basis, which range from 6.0 to 8.0 kg. This similar situation could contribute to the initial treatment failure, but when the indicated therapeutic measures were met, an adequate response to treatment was achieved with reduced glycemia levels. That is the treatment goal in the DM, to achieve metabolic control to prevent characteristic complications of the disease that can lead to death.

In a previous experience of our research team10 on the use of BioAlberic method at the beginning of DM treatment in dogs, which was performed in the same conditions as this study, a positive result was obtained with the use of the method chosen in a Doberman dog, which showed hyperglycemia reduction from 22.4 to 14.1 mmol / L, in one hour.

By applying the BioAlberic method and its Rapsul product, injecting animals was avoided and an effect similar to that of conventional insulin treatment was achieved. The product in magnetic format is advantageous because it is very easy to use, it is not uncomfortable for the dogs, was well tolerated, no side reactions, discomfort or pain occurred, and the owners of the animals showed satisfaction and admiration for it.

This is one of the preliminary experiences of our group in order to assess the usefulness of the BioAlberic method in the treatment of hyperglycemia in diabetic dogs. There are no references to compare our results, because almost no prior publication on the topic is known.

It is recommended to develop other research that provides new information on the effectiveness of the method and to further apply this alternative therapy that may be beneficial in veterinary clinical practice, along with the rest of the necessary measures to control the DM in domestic dogs.

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