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DESIGNING A METHODOLOGY FOR TRACKING OBESITY CASES IN DOGS AND CATS

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Abstract

Obesity has become one of the main health problems affecting progressively dogs and cats, being one of the essential medical topics in veterinary clinics. Veterinarians and nurses have identified an increase in the frequency of overweight or obese patients presenting at the clinic, and the causes highlighted by them regarding the weight gain of dogs and cats are a sedentary lifestyle, ad libitum food consumption, poor quality food, and associated conditions detected too late, of which the owners are not aware until further medical investigations. Therefore, the creation of a nutritional management plan for patients suffering from obesity or obesity complicated by other conditions was necessary to achieve the goal: a healthy weight for the pet.

Key words*: cats, dogs, nutritional plan, obesity, weight.*

INTRODUCTION

Obesity is defined as an excessive accumulation of triglycerides in adipose tissue due to an imbalance between energy demand and energy consumption, being the most common form of malnutrition in Westernized countries (German, 2006) for both humans and pets, mainly dogs and cats.

Two types of obesity are studied - obesity caused by over-consumption of food also called metabolically healthy obesity in medicine or overweight without associated health conditions (Miyazaki, 2007).

At the opposite end, there is pathological obesity which involves the appearance of associated changes such as metabolic, endocrinological, functional changes, and other diseases exacerbated by weight gain (Laflamme, 2006, 2008).

MATERIALS AND METHODS

In order to develop a monitoring plan for obesity in pets and to differentiate between the two types of obesity, the research focused on the development of the most detailed anamnesis forms and the nutritional consultation and monitoring form.

Inclusion criteria for pets, dogs and cats, are: body weight, body score (>4 or >5 - ideal body score according to WSAVA - Global Nutrition Committee), a body score scale from 1-9 being used (Lund, 2005), screening for health conditions by biochemical, endocrinological, pancreatic, urinary analysis of nutritional or metabolic conditions associated with overweight or obesity. The conditions associated with obesity are shown in Table 1.

RESULTS AND DISCUSSIONS

The subjects studied are dogs and cats that can be classified as overweight or obese according to their body weight at the time they are weighed compared to the breed-specific and official body weights and according to the body score published by the WSAVA-Global Nutrition Committee and used internationally in the pet obesity prevention programme.

In the literature we find three types of scales that characterize the body score of dogs and cats to determine the degree of overweight.

Two of these scales characterise body score with values between 1 and 5, for each value the animal's body parts and fat deposits in specific body regions are explained, the most helpful scale is the one with values between 1 and 9

with the body regions better described and with precise details about fat deposits.
Veterinarians at the University of Tennessee developed a scale expressing body fat score in percentages, with values ranging from 20% body fat, a value found in the literature as the "optimal" percentage of body fat in dogs and cats (Bjørnvad et al., 2011, Witzel et al., 2014) to 70% body fat associated with morbid obesity.
The animal will be approached by visual inspection and fitting into a body score, by palpation the ratio of bone, muscle and fat mass will be made and the weighing scale will be used as a measuring instrument.
This will compare the weight of the animal at that time with the ideal weight of the species and breed, and also the medical tests of interest before and at the end of the diet program would provide reliable information about the health status of the animal and possible diseases associated with obesity.
The medical history of the patient should be obtained by evaluating the individual health booklet, the information provided by the owner or even the medical record of the animal, these are obligatory steps in order to know as much as possible about the health status of the patient to be studied.
The research will focus on the creation of detailed history sheets of each patient to be studied, thus observing the state of health and body maintenance with the help:
- observation of clinical aspects of interest (appearance of fur, skin and teeth, appearance of fat deposits, listening to breathing sounds, heart rate, etc.);
- ultrasound comparison of areas of fat before and after participation in a diet programme;
- comparison of biochemical profiles of patients in the study before and after the start of the diet programme;
- the owners will be offered to change the diet before the start of the weight loss programme to a veterinary diet specialised for the health conditions the patient is suffering from and also to a diet specially designed for overweight patients.
The nutritional factsheet as presented in Table 2 is structured in the following sections: essential identification data of the dog/cat and owner (name, species, breed, age, gender), current medical data of the patient (hormonal status, weight, body score), medical and dietary history of the patient (conditions diagnosed so far at other hospitals or veterinary practices - are called conditions, current medication treatments or receipt of dietary or vitamin-mineral supplements, allergies to medication, food or food types), the patient's feeding history (type of food - dry food - brand, wet food - brand, home-cooked food - type, preferred type of food - commercial - dry or wet food, cooked or mixed food, amount of food - number of meals per day, treats - type and number of treats per day), data on the patient's environment (activity level of the dog/cat, space available, other animals in the house, possibility of being fed individually).
The information and communication stage with the owner involves informing the owner of the pet's current body score and the target weight that the patient should reach within a certain period of time.

Table 1. Obesity-related or exacerbated conditions

Metabolic changes	Endocrinopathies	Functional changes	Other diseases
Anaesthetic complications Dyslipidemia or hyperlipidemia Glucose intolerance Hepatic lipidosis (cats) Insulin resistance	Diabetes mellitus Hyperadrenocorticism Hypopituitarism Hypothalamic lesions Hypothyroidism Insulinoma Pituitary chromophobe adenoma	Decreased immune function Dystocia Heat intolerance Hypertension Osteoarthritis/joint stress/musculoskeletal pain Respiratory stress or dyspnoea	Impaired kidney function Cardiovascular disease Dermatopathies Neoplasia Oral (dental) diseases Pancreatitis Transitional cell carcinoma (bladder) Urinary tract disease (cats)

Laflamme, 2006

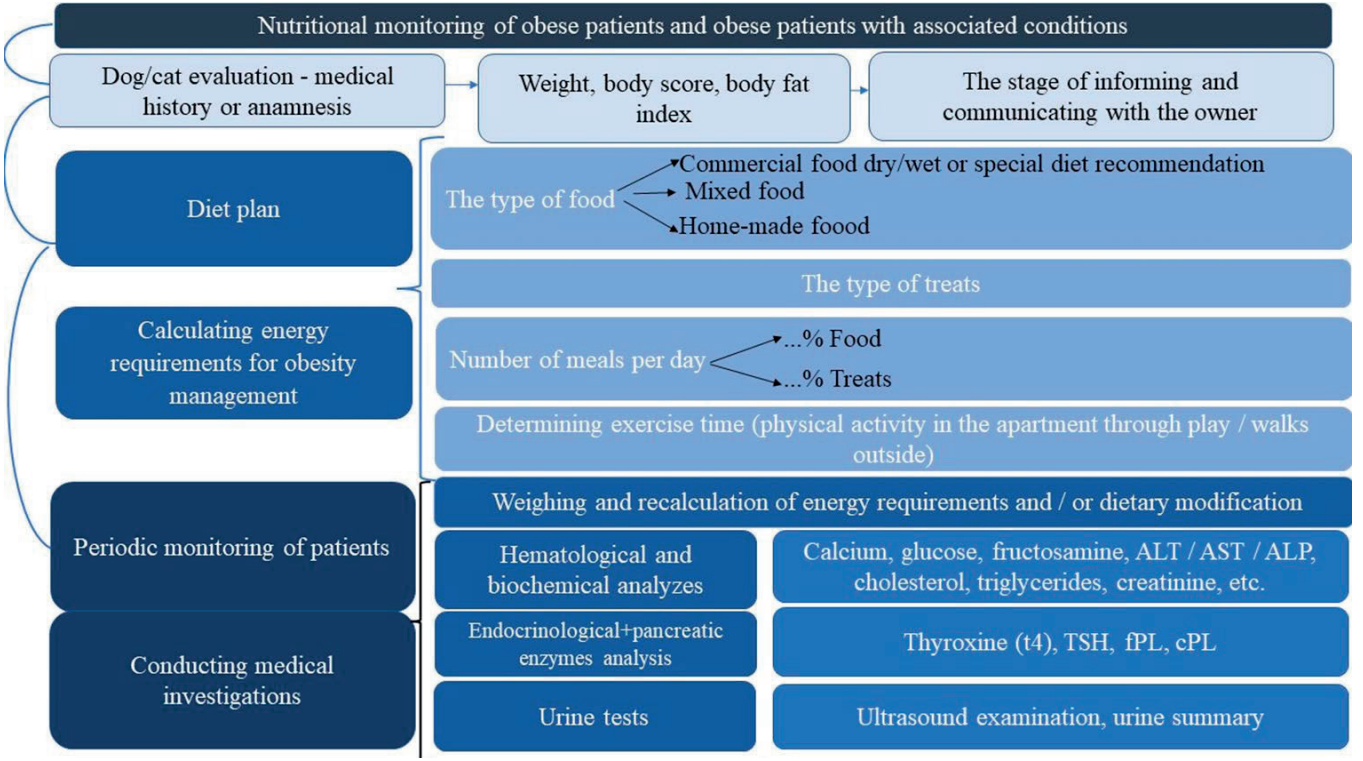

Figure 1. Nutritional monitoring plan

Table 2. Nutritional consultation factsheet for dogs and cats

I.	**Basic animal identification data:**	
Essential data for the identification of the animal and current data of the body condition of the dog or cat.	Date of arrival at the clinic: Name: Name of owner: Species: Breed: Age: Sex: Hormonal status: Weight: Body Score:	
II.	**Patient's medical and dietary history**	The owner's reply
The medical history of the animal provided by the owner from the animal's medical records tests/investigations performed at other veterinary clinics or hospitals.	From your knowledge (previous visits to the veterinary clinic), does your pet suffer from any chronic condition/illness/autoimmune disease? (cardiological, orthopaedic, urinary, renal, digestive, respiratory)	
	Is the animal currently on medication?	Yes/ No ↳ What drugs?
	From your knowledge, is the animal allergic to any food/medication or type of food?	Yes/No ↳ Allergens:
	Does the animal receive food supplements / vitamins / minerals? What type? How often?	
Feeding dietary history of the animal provided by the owner or sometimes several family members.	What kind of food does the animal currently receive? (home-cooked food and/or dry food - brand / wet food - brand)	
	Does the animal prefer cooked or commercial dry/wet feed?	
	How much feed does the animal get? How many times a day? Does the animal receive treats? What type? How often?	
Data about the dog or cat's environment.	How active is the dog/cat? (how much time the pet spends outside or inside playing/how often is the pet taken for walks)	
	Are there other animals in the apartment/house? Is it possible to feed the animal individually?	
The willingness of the owner to invest in additional medical investigations for the companion animal.	Are biochemical, haematological, pancreatic and/or endocrinological tests desired to be performed?	Yes/No

Figure 2. Veterinary weight scale - Hong Kong Metal for dogs

In order to minimise variability factors, constant communication is made with the owner and written recommendations are given at the beginning of the diet such as:

- a phased transition to the new food involving gradual habituation (over 7 or 10 days increasing the amount of the new food daily to replace the old one) of the dog or cat to the recommended food for weight loss and/or other health conditions;
- adhering to a feeding schedule for both dogs and cats by appointing times of day or even fixed times;
- compliance with certain quantities of the recommended food to be weighed using a kitchen scale;
- feeding the dog or cat individually to minimise the risk of the pet eating from other animals in the household.

A simplified weight monitoring sheet is also provided for the animal owner so that the nutritional programme sheet is easy to understand and follow.

The weight monitoring sheet contains: the current weight of the pet (dog or cat) and the target weight the pet should reach within a set time. The second element of the sheet is the kilocalorie/day or energy requirement calculated for obesity management in the dog or cat.

Figure 3. Veterinary weight scale - U-grow for cats and small dogs

Also integrated into the sheet is the nutritional programme itself displayed as a table divided into columns containing: "times of day - morning, noon and evening", which can be converted into fixed times if they wish and manage to follow as fixed a feeding schedule as possible; "type of food/feed to be given at one of the times of day"; "grammage/quantities in grams of dry or wet food to be given", "number of kilocalories for each type of food/feed".

At the end a total will be made of the amount of food and kilocalories consumed.

A table for owners who have the possibility to weigh the animal is also integrated in the monitoring form for overweight patients, containing: date of weighing, weight and possible observations (changes in diet, possible behavioural changes of the animal, etc.).

CONCLUSIONS

A first recommendation of nutritionists, specialists in canine and feline nutrition, refers to the determination of the degree of body maintenance of the animal by consulting the visual physical assessment tables of the risk indicators of overweight or obesity, a recommendation that comes to the assistance of pet owners and veterinarians.

The key points that bring success in treating obesity are:

- setting the ideal (or target) weight;
- a fixed programme and a set amount of food to reach the target weight;
- appropriate low-calorie but nutritionally balanced feed;
- all these, combined with gradually increased physical activity, are practical ways of managing being overweight in dogs and cats.

In addition, regular monitoring of patients through weighing, recalculation of energy requirements, dietary modification and a review of the medical test plan provides the success of an appropriate nutritional programme.

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