Investigating preventive-medicine consultations in first-opinion small-animal practice in the United Kingdom using direct observation

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ABSTRACT

Preventive-medicine consultations account for a large proportion of the veterinary caseload and previous research has suggested these consultations are fundamentally different from those in which the animal is presented for a specific health problem. There has been recent controversy around some aspects of preventive medicine for cats and dogs, and the full health benefits of the preventive-medicine consultation remain unclear. The aim of this study was to compare characteristics of the consultation and the problems discussed during the consultation between preventive-medicine consultations and other types of consultations.

Data were gathered during direct observation of small-animal consultations in seven first-opinion practices in the United Kingdom. Data collected included type of clinical examination performed, patient signalment, and details of all problems discussed (including whether the problem was presenting or non-presenting, new or pre-existing, who had raised the problem, body system affected and whether an action was taken). A two-level multivariable logistic-regression model was developed, with canine and feline patients at Level 1 nested within consulting veterinary surgeons at Level 2, and a binary outcome variable of preventive-medicine consultation versus specific health-problem consultation.

A total of 1807 patients were presented, of which 690 (38.2%) presented for a preventive-medicine consultation. Dogs were the most frequently presented species ($n = 1168$; 64.6%) followed by cats ($n = 510$; 28.2%), rabbits ($n = 86$; 4.8%) and patients of other species ($n = 43$; 2.4%). The five variables remaining in the multi-level model were whether multiple patients were presented, patient age, clinical examination type, weighing and number of problems discussed. Species, breed, sex, neutering status and practice did not remain in the final model.

Many non-presenting problems, including both preventive-medicine problems and specific-health problems, were discussed and acted upon during all types of consultations. Dental and behavioural non-presenting problems were discussed more frequently during preventive-medicine consultations compared with specific health-problem consultations.

Preventive-medicine consultations represent an opportunity for veterinary surgeons to discuss other aspects of preventive medicine, and to detect and manage new and ongoing health problems. A greater evidence base is needed to understand whether detecting and managing underlying disease during the preventive-medicine consultation has a positive impact on lifelong patient health and welfare.

1. Introduction

First-opinion veterinary practices are a valuable source of clinically relevant data and in recent years, research has increasingly focused on harnessing these data (Lund, 2015). However most of these studies have excluded preventive-medicine consultations from the data collected altogether (Radford et al., 2011) or have focused primarily on specific health problems such as canine diabetes mellitus (Mattin et al., 2014) and feline hyperthyroidism (Stephens et al., 2014). Preventive medicine is one of the most common aspects of veterinary medicine discussed during the first-opinion small-animal consultation (Hill et al., 2006), therefore, examining preventive-medicine consultations in depth may lead to findings which are highly valuable in first-opinion practice.

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Previous research has suggested that the preventive-medicine consultation may be fundamentally different to consultations for a specific health problem in terms of number of problems discussed (Robinson et al., 2015a), clinical examination (Robinson et al., 2015b), and communication style and content (Shaw et al., 2008). Recently, there has been controversy surrounding some aspects of preventive medicine, particularly vaccination (Day et al., 2010) and routine neutering (Beauvais et al., 2012). The interval between booster vaccinations has been extended for some antigens, but remains controversial, with various expert groups disagreeing on the recommended inter-vaccination interval for certain pathogens (Day et al., 2010; Scherk et al., 2013; AAHA, 2015; ABCD, 2015).

The potential role of the preventive-medicine consultation in addressing other aspects of patient health and welfare has not yet been fully addressed. Banyard (1998) found that 52% of cats and dogs presented for vaccination were suffering from concurrent disease, while Roshier and McBride (2013) found behavioural problems were often discussed during canine annual booster consultations. Therefore, it may be that even if the vaccination interval were to be increased, an annual health check to ensure concurrent disease is detected in a timely manner may still be advisable (Day et al., 2010). Understanding the health benefits of the preventive-medicine consultation, aside from the value of the preventive treatment for which the patient has been presented, is vital to determining whether such an annual health check would potentially be beneficial for the patient.

Gathering detailed data on all aspects of the consultation requires a method which is able to capture the full complexity of these encounters. In human medicine, this complexity is well recognised and previous research has used real-time direct observation of consultations as a method of data collection (Flocke et al., 2001). In contrast, studies on caseload in first-opinion veterinary practice have focused predominantly on remote data collection via the electronic patient record, and the alternative option of real-time direct observation of consultations has only recently been explored (Lund, 2015).

The primary aim of this study was to explore the differences between preventive-medicine consultations and other types of consultations, in terms of characteristics of the consultation and patient signalment. The secondary aim was to compare problems discussed in addition to the presenting problem between preventive-medicine consultations and other types of consultations, in terms of type of problems, who initially raised the problem, body system affected, and action taken. In addition, an inter-rater reliability study was conducted to measure agreement between two observers for all variables measured.

2. Materials and methods

2.1. Practice selection

A convenience sample of seven first-opinion veterinary practices in the UK, all of which undertook preventive-medicine consultations, was recruited (Robinson et al., 2015a). Practices recruited were those involved in a previous study (Dean et al., 2013), or those who had expressed interest in working with the Centre for Evidence-based Veterinary Medicine (CEVM). All seven practices approached agreed to take part in the study and no practices declined. Seven practices in total were chosen as this was considered to be the maximum number of practices which could feasibly be included using the methods selected. Six practices were located in England (three in the Midlands and three in the South) and one practice was located in Scotland. Four practices saw small animals only, while three practices also saw farm and equine patients. Two practices were single branch only, while

five practices had two or more branches. The median number of veterinary surgeons carrying out small-animal consultations per practice was 8 (range 3–20). The median years qualified of all veterinary surgeons observed was 14.3 (range 1–40 years). Of the 60 veterinary surgeons observed, 12 (20.0%) were certificate holders. Further details on the sample of practices involved in the study are reported in Robinson (2014).

2.2. Data-collection tool

2.2.1. Development of the tool

A data-collection tool was developed to allow the collection of complex data by a researcher during real-time direct observation of small-animal consultations at participating practices. The tool consisted of a series of open and closed questions on a paper form which was constructed using specialised questionnaire software (Cardiff Teleform® Version 10.5.1, Verity Inc., Cambridge) for ease of data entry and processing. The tool was used to gather data on signalment of the animal(s) presented, clinical examination performed, problems discussed, body system(s) affected, and actions taken. Following initial development of the tool, pre-test and pilot studies were conducted between August 2010 and March 2011, to help identify any issues relating to design of the data-collection tool or feasibility of data collection. Pre-testing involved collection of data by the primary investigator (NR) and another author (RD), during a single morning each at two of the practices, in August 2010. A pilot study was then conducted between September 2010 and March 2011, with data collected by the primary investigator during a single day at each of the seven practices. The reliability of the tool (Petrie and Sabin, 2009) was tested in May 2012 at one sentinel practice and involved the primary researcher and another author (MB) observing the same series of consultations. The two datasets were collated and sorted by a third researcher (RD). Agreement was then assessed by comparing each variable recorded in each consultation between the two datasets. Development, testing and utilisation of the data-collection tool has been described in more detail previously (Robinson et al., 2015a).

2.2.2. Data collected

A separate copy of the data-collection tool was completed for each patient presented. Data were collected on all problems discussed during the consultation, with a problem defined as 'any two-way discussion between owner/carer and vet regarding any aspect of the patients health and wellbeing' to include issues relating to preventive medicine as well as to specific health problems. The reason for presentation as stated by the owner/veterinary surgeon (or the first problem mentioned where it was not explicit), was considered to be the 'presenting problem'. Each additional problem discussed after this was considered to be a 'non-presenting problem'. For each patient, only one presenting problem could be recorded; however, several non-presenting problems could be recorded.

2.2.2.1. Characteristics of the consultation and patient signalment between preventive medicine and specific health-problem consultations. For each patient presented, data were collected on patient signalment, including species, breed (pedigree or crossbreed), age, sex and neutering status. Data were also gathered on aspects of the consultation for each patient, including practice, consulting veterinary surgeon, whether multiple patients were presented, whether a full or focused clinical examination was performed, and whether the patient was weighed. For each patient, the consultation was also categorised as being a preventive-medicine consultation or a specific health-problem consultation. The consultation was categorised as a preventive-medicine consultation if the presenting problem related to the prevention of disease or injury, and the type