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Guest edited by Eduardo Marques Fontes
and Peter Lees



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to LPS, the effects of immunomodulating drugs could differ in the different species, an equine macrophage cell line, eCAS, was developed and characterized [2]. Hence, the aim of this study was to establish the immunomodulatory capacities of CB in this novel model system.

MATERIALS AND METHODS

The e-CAS cells were maintained as described by Werners *et al.* [2]. Cells were plated out in 24-well plates at a density of 2×10^5 cells mL^{-1} . CB was added to the cells in different concentrations ranging from 0 to 5 μM , directly followed by LPS stimulation ($10 \mu\text{g mL}^{-1}$). After 24 h of incubation, 100 μL of the cell culture supernatant was removed and stored at -20°C until further analysis. Tumour necrosis factor α (TNF- α) concentrations in the cell culture supernatants were measured with a cytotoxicity assay using a porcine kidney cell line (PK-15) according to the method of Berton *et al.* [3]. Cell viability was assessed using the alamar blue reduction assay according to O'Brien *et al.* [4].

RESULTS

The results showed a marked dose-dependent decrease in TNF- α production after CB treatment, which is decreased by 78% at 1 μM . Cytotoxicity was only observed in cells treated with the highest concentration of CB used (5 μM), where viability decreased to 75% of the control cells.

DISCUSSION

Data obtained in this study indicate the inhibitory potential of CB on LPS-induced cytokine production in a species-specific model system. This indicates that CB may prove useful to reduce the inflammatory response as seen in horses suffering from EAD. Furthermore, e-CAS cells appear to be a useful tool to study the immunomodulatory effects of other therapeutic agents.

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C-13 (0148) Suspected adverse effects of veterinary medicines in Finland in 2002

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A total of 97 suspected adverse effects of veterinary medicinal products were reported to the National Agency for Medicines in 2002. A majority, 93 cases, was classified as adverse effects in animals, one case was an adverse effect in man and one case of insufficient withdrawal period in milk. No effects on the environment were recorded. The nonhuman species involved were dog (82 cases), cat (11), horse (two adults and one foal) and cattle (one case – insufficient withdrawal period). No cases were reported for pigs, poultry, fur animals or fish. This probably

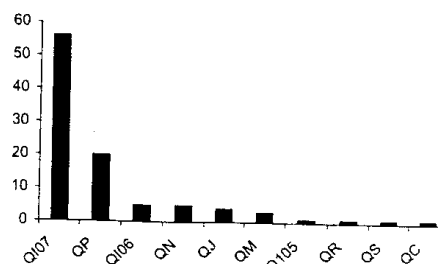


Fig. 1. ACT groups involved in cases.

reflects underreporting of adverse effects in large-scale animal husbandry. All reports came from veterinary surgeons. Most (86) were reported directly by practitioners and the rest by veterinarians employed by the pharmaceutical industry. Thirty-eight were classified as serious and 59 as nonserious adverse effects. A total of 62 cases involving vaccines were reported. Another significant group of veterinary medicines implicated were anthelmintics, which were involved in 20 cases. Figure 1 depicts the breakdown of ACT groups involved. (Q107 canine vaccines, QP antiparasitic drugs, Q106 feline vaccines, Q sedatives and narcotics, QJ antimicrobials, QM NSAIDs, Q10 equine vaccines, QR pulmonary, QS topical otic and QC cardiac treatments.) Of the 56 cases of suspected adverse effects caused by canine vaccinations, a majority involved some kind of hypersensitivity reaction. Common signs included anaphylaxis, pruritus, facial swelling, ataxia and convulsions. One case of suspected lack of efficacy was recorded. Twenty-eight vaccination reactions were considered serious. Of these, most (25) involved anaphylaxis, but only one dog died as a consequence of the adverse effect. Canine vaccination reactions were relatively easy to note and classify. In the ABON-classification, 46 were classified A, three were classified B, one was classified N and none was classified zero. A great majority of these cases followed vaccination with a combination of distemper, canine adenovirus and parvovirus. Of the 22 cases regarding parasitic treatments 16 were in dogs, five in cats and two in foals. They involved 15 treatments with endoparasitides, four with ectoparasiticide and four with endectocides. Common adverse signs in dogs treated for endoparasites were diarrhoea, vomiting and pruritus, possibly signalling a reaction to dying parasites.

C-14 (0172) Comparison of the therapeutic effects of florfenicol and tilmicosin in enzootic calf bronchopneumonia

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INTRODUCTION

Enzootic calf bronchopneumonia is a multifactorial disease that occurs in association with the interaction of various infectious agents, and environmental and calf susceptibility. The economic losses are associated with death loss and treatment costs, reduction of live weight gain and reduced productive life span, which may be considerable. Most control strategies of disease are

based on improvement of management, vaccination and treatment. The aim of treatment is eradicating the pathogen and lowering the extent of inflammation and adverse effects of pyrexia and depression. Treatment must be instigated as early as possible to reduce the possibility of long-term pulmonary damage and the development of chronic pneumonia. The selection of an antibiotic is based on perceived efficacy, cost and ease of administration, availability, toxicity and length of withdrawal time. Furthermore, susceptibility of the causative pathogens to the antimicrobial must be considered, because of the occurrence of drug resistance. The clinical microbiology and pharmacokinetics of the drug involved do not necessarily correlate with therapeutic outcome. A properly designed clinical trial utilizing spontaneously occurring disease is therefore the most effective method for evaluating the efficacy of antimicrobials for treatment of a particular disease.

MATERIAL AND METHODS

In this study, the field efficacy of florfenicol with tilmicosin was compared in the treatment of enzootic calf bronchopneumonia. Calves between 1 and 6 months in three dairy farms of Mashhad suburb were used. Calves showing visual signs of pneumonia were entered into the trial. After physical examination, clinical findings were recorded. They were weighed and blood samples collected by venipuncture. They were randomly assigned to received either Florfenicol (20 mg kg⁻¹ bw, i.m., two injections 48 h apart, 35 calves) or Tilmicosin (10 mg kg⁻¹ bw, s.c., one injection, 35 calves). Clinical measures of efficacy included mortality, rectal temperature, illness index scores, assessment of treatment success or failure and the number of relapses or re-infections. In addition, haematological indices, total plasma protein and fibrinogen were studied on days 0 and 4 after treatment. The results were analysed with the statistic package SPSS 9 (t-test and chi-squared test).

RESULTS AND DISCUSSION

Differences were not statistically significant between treatment groups ($P > 0.05$). Resolving clinical signs in florfenicol and tilmicosin treatments were, respectively, 88.5% (31 cases) and 85.7% (30 cases, one case demised), which were statistically not significant ($P > 0.05$). No significant adverse reactions were noticed with either drug. The results indicate that Florfenicol and Tilmicosin are comparable in the treatment of enzootic calf bronchopneumonia.

C-15 (0181)

Antibiotic resistance of different *Salmonella* sp. serovars isolated from a marine environment

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INTRODUCTION

Little is known about the antimicrobial resistance of pathogenic bacteria isolated from the environment as they are supposedly not under therapeutic pressure. In leisure areas, such as marine seashores, Portuguese legislation is clear for some microbial levels relevant to water quality, but it is not concerned about the

pathogenicity and virulence of bacteria isolated. For *Salmonella* isolates, this can only be achieved by studying epidemiological markers as serovars and relating them to an antibiotic profile.

MATERIALS AND METHODS

A total of 105 *Salmonella* isolates provided by 40 positive samples of sand, seawater and seabird faeces of the Lisbon coast were serotyped according to Spice-Edwards scheme with both somatic and flagella antisera. Antibiotic sensitivities were assessed using the Kirby-Bauer method as described by the NCCLS (National Committee for Clinical Laboratory Standards, Wayne, USA).

RESULTS

Of the 105 isolates, 35 tested for antimicrobial resistance were sensitive to all antibiotics. The remaining 70 isolates showed either a single resistance to one specific drug, or multiple resistance with a maximum of eight simultaneous resistance recorded for two *S. Typhimurium* isolates. The extent of antibiotic resistance was highest for tetracycline. A very high number of isolates showed antibioresistance to one or more of the tested drugs. Common serovars implicated in human and animal illness as *S. Typhimurium* showed a greater level of resistance compared with more uncommon serovars, like *S. Orion* or *S. enterica* subsp. II. Other serovars, like *S. goettingen*, showed a resistant profile only when isolated from a sample with another serovar (*S. enteritidis*) that matched the same profile. All isolates were sensitive to relatively recent antibiotic molecules like enrofloxacin and cephalexime.

DISCUSSION

These results are similar to the antibioresistance found by the Portuguese National Reference Centre for *Salmonellae* of environmental origin, where low levels of antibioresistance are shown for third generation cephalosporins and quinolones. The highest resistance is also similar to the results of this study, in tetracycline and streptomycin, but not for ampicillin. Antibiotic resistance levels in *Salmonellae* isolated from the marine environment clearly indicate that the isolated strains are subject to a high antibiotic pressure. Further surveys should be made to assess the origin of these strains. Antibiotic resistance in serovars are usually less pathogenic, should be investigated at the molecular level to evaluate mechanisms of drug resistance transfer, as they can occur even in a rough environment, as marine conditions.

C-16 (0229)

Study of the margin of safety of amoxicillin in pigs

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INTRODUCTION

Amoxicillin is a broad-spectrum antibiotic of the aminopenicillin group useful for treating infectious diseases in large animals [1]. Penicillin has low toxicity where hypersensitivity reactions are the most commonly encountered side-effects [2]. The aim of this study was to identify the margin of safety of amoxicillin