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Short Communications

USE OF ANTIBIOTICS IN FOOD ANIMALS: A CASE STUDY OF A MAJOR VETERINARY OUTLET IN EKITI-STATE, NIGERIA

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SUMMARY

A study was conducted on the pattern of antimicrobial use in animals in Ekiti State. A weight by weight comparison of the various drugs showed prevalent use of gentamycin, benzyl penicillin tetracycline, chloramphenicol, and neomycin in that order. This is ascribed to high dosage volume of the respective drugs. The percentage consumption by weight of the drugs was stable for tetracycline, neomycin, penicillin, erythromycin, streptomycin, and tylosin through the period. There is an increased percentage use of quinolones (Flumeqine and Erofloxacin), chloramphenicol and gentamycin. This signifies a shift in the antibiotics in favour of quinolones, chloramphenicol and gentamycin. The public health implication of these drugs is hereby discussed.

KEY WORDS: Quinolones, Percentage, Dosage

INTRODUCTION

The focus of the developed world is on making food safer than increasing production. The huge benefit accruable to veterinary interventions in animal production is beginning to be overwhelmed by the negative effects of abuse and uncontrolled use, resulting in drug residues (Endtz and Ruiijs 1998). The implication of meat drug residue on human health has been said to include antibiotic resistance (CCDR 2003) and Allergic reactions to beta-lactam antibiotics (Dewdney and Edward 1984).

The advisory committee on microbial antibiotics resistance in relation to food safety has expressed its difficulties in getting data on volume of antibiotics consumed by the farming communities in UK. which has been ascribed to different reasons particularly those bordering on privacy of entrepreneurs.

It is the objective of this study to appraise qualitatively and quantitatively antibiotic usage pattern in this locality over the period. The study will also signify any shift in antibiotic use among farmers over the period. This study forms a basis for estimating antibiotic consumption, bearing in mind the estimated population of livestock in the locality.

MATERIALS AND METHODS

Ekiti State with its growing livestock and poultry industry has a major Veterinary outlet. The word "Major" signifies that it is the only veterinary drug outlet in the State as at the time of this study. The weight of antibacterial drug supplies to farmers over a 3 year period (2002 2004) was determined from the records of inventory over the period. Drugs were classified based on their generic identities irrespective of the proprietary names. The quantity (in grammes) of the active principle consumed over a year was summed. The relative percentage weight of each of the drugs compared to total antibacterial consumed in each year was also computed.

RESULT AND DISCUSSION

The weight of antimicrobial drug consumed is in the following order, Gentamycin, benzyl penicillin, tetracycline, chloramphenicol, neomycin and streptomycin.

The percentage weight of antibiotic consumed increased for the following. A) Quinolones b) chloramphenicol c) tylosin d) gentamycin e) neomycin. This percentage weight reduced for

Erythromycin, streptomycin, tetracycline and benzyl penicillin.

The prevalent use of gentamycin, benzyl penicillin, tetracycline, chloramphenicol and neomycin in that order (Table 1) is largely based on the various volumes that constitute a dose of the drug and not necessarily based on the frequency of use of the drugs.

It is also important to note that the huge volume of tetracycline, neomycin, penicillin, erythromycin, and streptomycin and tylosin use may not be based on their efficacy as a common broad spectrum antibiotic of high therapeutic value, but their place may have been reduced to antibiotic of mere preventive purposes. This may be explained by their fairly stable demand over the three year period despite increase in percentage consumption of other newer antibiotics. Their respective antibiotic percentage use reduced or stabilized over the period. (Table II). The food safety implication of this routine antibiotic use have been examined by (Dipeolu and Ayinde 2001), who found tetracycline residue of 0.017 ug 0.039 ug/kg in the pork in Abeokuta area which is above the Codex recommended residue levels (MRL). A similar screening will be recommended for other antibiotics such as neomycin, streptomycin and gentamycin. A major sequela of the increased use of these antibiotics in animals has been documented with relatively higher trend in the number of Salmonella isolates resistant to these antibiotics.

The increased percentage demand and use of quinolones, chloramphenicol and gentamycin (Table II) is of major public health interest. Advisory Committee on the Microbiological Safety of Food (1999) expressed dismay on quinolone resistant Camphylobacter which have evolved shortly after its use began on animals especially poultry. Eudtz and Ruiijis , (1998) have corroborated this fact describing how fluoroquinolones use in poultry resulted in development of quinolone resistant Camphylobacter in the intestinal tract of birds treated.

The rise in the use of chloramphenicol in animals informed its ban by the National Food and Drug Administration Control due to its tendency to result in food residue. The use of Gentamycin in food animals have been Condemned and banned in developed Countries based on its prolonged residues and high cost. (Brander et al., 1991).

The shift in the use of antibiotics may be sequel to frustration of farmers with the conventional antibiotics formerly in use which have become inefficacious especially. in the face of current hatchery borne salmonellosis in poultry.

It is hereby concluded that the use of some antimicrobials of public health concern has risen in Ekiti State in the past three years. It is therefore recommended that legal classification and control of Veterinary drugs be effected immediately to forestall the abuse of these drugs and endangering of public health.

Table 1: Estimate of antibiotic consumed in 2002- 2004 (g)

	2004	2002	2003
Benz penicillin	52,500	53,200	52,800
Chloramphenicol	3,671	4,784.3	5,784.2
Erythromycin	3,480	3,070	3,081
Neomycin	964.8	1007.4	1120.6
Tetracycline	5,244	5,747	5,604
Streptomycin	3,300	3,471	3,400
Tylosin	2,640	1,890	1,780.6
Quinolones	636	1,870	3047
Gentamycin	182,435.8	205,039.7	216,617.4

Table II: Percentage ratio of Specific antibiotic to total antibiotic Consumed 2002 -2004(%)

	2002	2003	2004
Benzyl penicillin	28.7	25.9	24.3
Chloramphenicol	2.0	2.3	2.6
Erythromycin	1.9	1.4	1.4
Neomycin	0.5	0.4	0.5
Tetracycline	2.8	2.8	2.5
Streptomycin	1.8	1.6	1.5
Tylosin	1.4	0.9	1.0
Quinolones	0.3	0.9	1.4
Gentamycin	60.2	63.4	64.6

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