

Short Communication

ISOLATION OF *YERSINIA ENTEROCOLITICA* FROM ANIMALS AT SLAUGHTER POINT IN JOS ABATTOIR, NIGERIA

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INTRODUCTION

Yersinia belongs to the family enterobacteriaceae which has eleven (11) species and divided into 6 biotypes, 8 phage types and more than 60 serotypes. Three of the species; *Y. enterocolitica*, *Y. pseudotuberculosis* and *Yersinia pestis* are pathogenic to man (Okwori *et al.*, 2005). In the past decades, reports on the prevalence of *Y. enterocolitica* and *Y. pseudotuberculosis* being the causes of gastrointestinal disturbances in man were documented (Lal *et al.*, 2003). Furthermore, pigs are considered to be the most important reservoir and are known to carry the same serotype found to cause disease in man, e.g, serotype 0:3, 0:9, 0:8 and 0:6 (Bottone, 1999). The animals carry the bacteria in their throat and excrete them in their faeces (Zen-Yoji and Maruyamma, 1972). This study is therefore aimed at determining the prevalence of *Y. enterocolitica* in the animals studied.

MATERIALS AND METHODS

Sample collection

Four hundred and fifty (450) Tongue swab samples were collected from pigs, cattle and sheep at the slaughter points in Jos municipal abattoir, Nigeria. One hundred and fifty (150) of each of these animals was screened for *Y. enterocolitica*. Samples were labeled accordingly and transported to the of Bacteriology laboratory of Federal College of Veterinary And Medical Laboratory Technology Vom, in ice pack.

Bacterial isolation

The method as described by Anyanwu (1995) was adopted for the isolation of the organism, using cold enrichment at 4°C for 21 days. They were then subcultured onto Cefsulodin Irgasan

Novobiocin agar (CIN), Deoxycholatecitrate Agar (DCA) Hynes modified fomular and MacConkey Agar (MCA) Oxide dehydrated medium fomular(CM7) and incubated at room temperature for 24 to 48hrs.

Biochemical tests using API20E Kit

The biochemical characteristics of the isolates were determined and confirmed to be *Yersinia enterocolitica* using API20E test kit as described by O'Hara (2005).

Susceptibility testing

This was performed using standardized single disc diffusion methods as described by Cornelis (1998). The antimicrobial agents used were Ciprofloxacin 10g/ml, Floxavid 30g/ml,

Streptomycin 10g/ml and Tetracycline 20g/ml.

Serotyping

The method as described by Okwori *et al.*, (2005) was adopted for serotyping the isolates.

RESULTS AND DISCUSSION

Out of the 450 samples screened, 35 (23.33%) was positive for *Yersinia enterocolitica*. All isolates were from pigs, with cattle and sheep recording negative. Serotyping revealed all isolates to be 0:9 (Table I). This rate is much lower than 51.6% reported for slaughtered pigs in temperate countries like the USA. However, the isolation technique has been reported to have a significant effect on the rates obtained (Doyle and Hugdahl, 1983). The cold nature of Jos may also be said to be a predisposing factor to the survival and spread of the organism due to their cold loving nature,

(Mark *et al.*, 1994). The solation of serotype 0:9 found in this study agrees with the report of Okoroafor *et al.* (1988), but at variance with the report on isolation study on pigs in the Zaria area where in addition to other serotypes, 0:3 and 0:8 were isolated.

Ciprofloxacin and Floxavid were recorded as the most susceptible antibiotic to *Y. enterocolitica*, with Streptomycin and Tetracycline (Table II). This is similar to that reported by Agbonlahor *et al.* (1981) with Ciprofloxacin being most sensitive.

Data from this study suggest that pigs may be an important reservoir when compared to the rate of isolation in cattle and sheep, and source of transmission to other animals as well as humans. This study however recommends that adequate cooking of pork be done before consumption. Consumption of raw pork be avoided.

TABLE I: Percentage distribution of isolates

Animal Specie	n=	No. Positive	Percentage	Serotype
	450	n=	Positive	
Cattle	150	0	0	-
Sheep	150	0	0	-
Pigs	150	35	23.33%	0:9
Total	450	35	23.33%	

TABLE II: Antimicrobial susceptibility pattern of *Yersinia enterocolitica* isolates

Antimicrobial Drug	Disc Potency (µg)	Zone of inhibition (mm)	No. of isolates sensitive
Ciprofloxacin	10	30	33
Floxavid	5	20	28
Streptomycin	30	15	25
Tetracycline	5	17	20

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