QUANTITATIVE and QUALITATIVE DETERMINATION of FAECAL MICROFLORA of PIGS SUFFERING FROM SWINE DYSENTERY

Szynkiewicz Z.M.*, Binek M., Rumińska A.
FACULTY of VETERINARY MEDICINE, INSTITUTE of INFECTIOUS and PARASITIC DISEASES, GROCHOWSKA 272, 03-849 WARSAW

The increase of Campylobacter sp. /Vibrio coli/ in pigs suffering from swine dysentery /S D/ has been reported by many authors. Tere is also some suggestion that in faecal microflora sampled from such animals there is an increase in the number of Clostridium. B. Aelbec /1/ reported that in experimental S D there is an increase of the number of non-spore forming anaerobes in intestinal contents.

The purpose of the presented research was to study the dynamics of changes of faecal microflora in experimental an spontaneous swine dysentery.

Faeces of 25 pigs with spontaneous and non-medicated experimental S D and from 20 healhty animals were sampled for anaerobic and aerobic bacteria.

Treponema hyodysenteriae was isolated on modyfied spectomycin /vancomycine TSA agar Songer at al /2/.

Bacteroides were cultivated on VL medium supplemented with kanymycin and menadion, modyfied by Kałowski. For Clostridium isolation selective medium with framycetin and polimyxin Szynkiewicz et al. /3/ were used. For aerobes isolation of a standard blood agar medium, Mc Conkey agar, 110 Difco medium, sodium azide agar, Difco AOAC medium with pH 5,8, Sabouraud penicilin and streptomycin agar were used.

Results

The results presented in Table 1 show the mean number of viable bacteria in gm of faecal sample from diseased or healthy animals. The number of Lactobacilli and Streptococcus D decreases in pigs with symtoms of S D and from which T. hyodysentery was isolated, from 10^9 to 10^7, and Bacteroides sp. increases from 10^8 to 10^9. Usually during the first four days the number of cocci of Micrococaceae increased, but following this they decrease from 10^6 to 10^5. The number of E.coli decreased slightly but still maintained the "normal level" of this bacteria in the faeces. The highest decrease of Streptococcus D/from 10^9 to 10^6 was observed during the first 4 days of disease, and Lactobacillus /from 10^9 to 10^5/ during the first 6 days of disease. The number of Bacteroides sp. increases during the first four days from 10^7 to 10^9. In some animals the number of Clostridium increases. In animals which recovere from SD the number of mentioned bacteria gradually reached the "normal proportion" as compared to control swine.

Conclusion.

In experimental and spontaneous swine dysentery the increase of Bacteroides sp. cocci of Micrococcaceae was observed in faecal specimens. At the same time a sharpe in the number decrease of Lactobacilli and Streptococcus D. was observed. In pigs which recovered from swine dysentery the proportion of bacteria gradually reached "normal proportion".

Table 1. Mean number of microorganism isolated from faeces of pigs suffering from swine dysentery

Microorganisms	number of microorganisms in 1 gm of feace	
	healthy	suffering
non spore formin anaerobes	$4,0 \times 10^8$	$3,0 \times 10^9$
Clostridium perfringens	$1,6 \times 10^4$	$5,0 \times 10^4$
Lactobacillus sp.	$2,0 \times 10^9$	$3,1 \times 10^7$
Streptococcus D	$2,0 \times 10^9$	$6,6 \times 10^7$
Micrococcus and staphylococcus	$3,0 \times 10^4$	$4,8 \times 10^5$
E. coli	$2,6 \times 10^7$	$5,2 \times 10^6$
Fungi	$3,0 \times 10^2$	$1,5 \times 10^3$
Treponema hyodysentery	non detected	$>2,0 \times 10^2$

Selecte references: 1. Aalback B., Acta Vet. Scand. 13: 228-237, 1972. 2. Songer J.G.J., Kinyon J.M., Harris D.L., J.Clin. Microbiol. 4: 57-60, 1976, 3. Szynkiewicz Z.M., Bielecka J.K., Rocz. Woj. Inst. Hig. Epid. 13: 61-69, 197