INTRODUCTION:

Rotaviruses are very common as a cause of diarrhea in young pigs in various countries and also in Yugoslavia (Wood and Bridger 1974, Loder et al. 1975, Lecce et al. 1976, Bohl et al. 1978, Grus et al. 1980). There are very few informations about naturally occurring infection of pigs with rotaviruses. Rotaviral diarrhea most commonly occurs in one to eight weeks old pigs (Bohl 1979).

Our first detection of rotavirus was established on a large pig farm with swine dysentery and where an outbreak of transmissible gastroenteritis was eradicated six years ago. Infection was spread within a swine herd mostly affecting pigs of about 50 kg. Mortality of weaned pigs was high with low mortality.

The second detection of rotavirus was on a selection farm where all breedings sows and piglets were vaccinated against Escherichia coli.

METHODS:

Fecal samples from diarrheic pigs were frozen at -20°C. For immuno-electron microscopy 2% suspension of faeces was prepared with Hank's solution, centrifuged 20 minutes at 6000 r.p.m. supernatant was mixed in equal volume with hyperimmune anti-rotavirus serum. After one hour of incubation at 37°C, mixtures were centrifuged one hour at 25,000g, supernatant was discarded, pellet resuspended in some drops of distilled water and put on Formvar coated grid. After cleaning with agar, specimens were stained with 2% phosphotungstic acid pH 6.5 and examined using a Jeol JEM-T 5 electron microscope.

Two one day old colostrum deprived piglets were intranasally inoculated with filtered EM positive faecal suspension. Material originated from both farms.

Continuous cell line RD cultures were inoculated with trypsin activated rotavirus from EM positive faecal suspensions. In maintenance medium 10 µg/ml of trypsin was added in Eagle's MEM.

RESULTS:

Out of eight piglet faecal samples from the first farm in four samples rotaviruses were found by immuno-electron microscopy.

In nine of twelve samples originated from selection farm rotavirus were detected. We have not able to demonstrate coronavirus in all samples.

In experimentally infected piglets diarrhea was developed within twelve to fourteen hours, 36 hours after exposition they were euthanized. Rotaviral aggregates were found in intestinal content by EM.

By treatment with trypsin we have succeeded to propagate two rotavirus isolates on RD cell line through six passages.

CONCLUSIONS:

On farms where enteric infection of piglets (Escherichia coli, TK2) were minimal or eradicated rotaviruses were established by immuno-electron microscopy.

On the farm where TK2 was eliminated, few years latter rotaviral diarrhea in piglets appeared. On the selection farm rotaviral infection was confirmed in sows and weaned piglets after vaccination of herd against E.coli.

Experimental infection on colostrum deprived piglets have clearly established porcine rotavirus as aetiologic agent of diarrhea on both farms.

REFERENCES:


Grus et al.: Sekaz rotavirusu pri prerišču velikomoci. Zdrav. inžin. in zdravstv. 43(1980), 165-169

