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Role of boars in infestation with clamidiosis

Goal. Determine the role of peduncles in spreading chlamydia pigs. Methods. Epizootological monitoring; clinical, pathoanatomical and laboratory diagnostic studies. Results The data of monitoring of chlamydial infection in 105 pig farms of 15 oblasts of Ukraine for the last 18 years are given. It was found out that among the pigs ineffective from this disease of the farms circulating 5 types of pathogens: Chlamydia abortus, S. suis, C. pecorum, C. psittaci and C. pneumoniae. The level of infection of surveyed pig's objects reaches 63%. Clinical manifestations and pathoanatomical changes for chlamydia in chickens-pedigrees were determined. Conclusions The analysis of the data obtained makes it possible to conclude that pigs of this production group are one of the main sources of spread of chlamydial infection. The methods of prophylaxis of chlamydia of pigs and measures of healing from this infection are proposed, taking into account the role of peduncles in its distribution.

Key words: kennel-pedigree, chlamydial infection, epizootological monitoring, PCR, health improvement measures.

Chlamydia of swine, as a disease that causes abortions and stillbirth in pigs; urethritis, orchitis, balanostasis in puppies; Pneumorrhages, encephalitis, polyarthritis and conjunctivitis in piglets, due to their distribution, cause significant economic losses in the pig industry [1, 2, 5, 8, 12]. The main source of chlamydial infection of the pigs is kennel-pedigrees and sows that transmit the progenitor to the offspring [6]. Animals are infected by aerogenic, nutritional and, primarily, by sexual pathways [2, 5, 12]. Patients and chlamydia cells are the source of the spread of the infectious agent, distinguishing it from the excreta and secretions of the body, first of all, with sperm [2, 5, 8]. Therefore, the problem of chlamydia among rodent breeders is one of the key in spreading this infection.

The purpose of the research is to determine the role of pupae in the dissemination of chlamydial infection.

Materials and methods of research. Studies on chlamydia among puppy-breeders have been conducted since 1997 on the basis of the Poltava research station of the Institute of Veterinary Medicine of the National Academy of Sciences (since 2012 - the Department of veterinary medicine of the Institute of Pig Production and Agro-Industrial Development of NAAS). During this period, 937 donkeys were surveyed of 105 breeding and pig breeding farms in Vinnitsa, Volyn, Dnipropetrovsk, Donetsk, Zaporozhye, Kirovograd, Kyiv, Odesa, Poltava, Sumy, Kharkiv, Kherson, Khmelnytsky, Cherkasy and Chernivtsi regions of Ukraine.

Diagnosis for chlamydia was posed complexly on the basis of the results of epizootic, clinical, pathoanatomical and laboratory investigations. Diagnostic studies using the polymerase chain reaction (PCR) method were performed using self-developed test systems to indicate the DNA fragments of the gene encoding the 16S rRNA and the MEMR gene of the Chlamydia genotype, pathogenic to animals [9, 11], and also commercially Available Polymic PCR Test Systems (NGO "Liteh", Russia), "HLA-KOM" (Federal State Unitary Enterprise of the Central Research Institute of Consumer Protection, Russia). In order to determine the type of chlamydia, a multiplex PCR test-system of own development was used that allows differentiating between 6 types of bacteria of the genus Chlamydia in one amplification reaction. Materials for research were epithelial scraps from the mucous membranes of the precipitate or the rectum and samples of sperm [10]. In addition to PCR, microscopy of ointment prints from organs (brain, lesions and parenchymatous organs) stained with Stemp, McCiaverello and Romanovsky-Gimzoy, serological studies (RSK, RDSK, RNSK, RNGA), as well as the isolation of chlamydia from samples of sperm and pathological material in laboratory animals and chicken embryos with confirmation of microscopy, in RIF and PCR.

Research results. As a result of epizootiological monitoring of chlamydial infection among pig breeding enterprises, 66 dysfunctional points (63%) were identified. It should be noted that among the pigs of the

surveyed farms, the manifest form (the course of the disease with pronounced clinical signs and pathoanatomical changes) was 45%. In other cases, chlamydia had a latent course with sporadic clinical manifestations, that is, among the reproductive stomata, there were practically no symptoms of chlamydia, with the exception of 10-20% of colds and individual cases of abortions and stillbirths among sows, and between 5 and 10% of piglets were detected delayed growth and development, defeat of the respiratory and gastrointestinal tract, arthritis of one or more joints.

During the study of chlamydia isolates, 5 types of chlamydiales of Chlamydiaceae of the genus Chlamydia were recorded: Chlamydia abortus (38%), S. suis (35), S. pecorum (31), C. psittaci (3), C pneumoniae (3%). At the same time, in 9 cases, two types of pathogens - C. abortus and C. pecorum and C. abortus and S. suis - were circulating among the pigs at the same time. It is important to note that in practically all cases where the disease was little manifest, the pathogens were C. abortus and C. pecorum. Other species of Chlamydia, in particular S. suis, have been isolated from pigs for chronic course of the disease with favorable clinical manifestations.

According to literary sources, chlamydia in rodent breeders is predominantly a latent course [2, 3]. The results of our studies also confirm this, since only 10% of the pediatricians have shown clinical manifestations of chlamydia. Of the 407 kennel puppys, samples of biological material containing DNA chlamydia, 41 were clinical manifestations of chlamydia: 32 were balanoposthitis (78%), 27 were orchies (66%), and 7 were prostatitis (17 %) and in 3 - proctitis (7%). The decrease in libido was recorded in 28 parents (68%). The total impression was recorded in 4 boars (10%). Also, among 12 puppy buds, arthritis of the joints of the anterior and hind limbs (29%) was revealed, indicating the generalization of the infectious process. Regarding the quality of sperm, in the study of 87 specimens of chlamydia-infected specimens, 58 (67%) cases had different defects: oligospermia - in samples from 32 animals (55%), oligozoospermia - in 43 (74%), asthenozoospermia - in 34 (59%), partial necrospermia - in 16 (28%), aspermia - in 3 (5%).

In latent patients, kennel-peduncles during the external examination of visible pathological changes was not [7]. However, after the opening of their carcasses, edema and hyperplasia of the testicles were observed, hemorrhagic inflammation of the family lines and necrotic lesions of the penis, enlargement of the inguinal lymph nodes 1.5 times, cystic enlargement of the part of the prostate gland, in the section of which in the gastrointestinal tract was excess mucus.

During microscopic examination of histological sections of the tissues of the testicles, severe blood filling and vascular ecstasy were recorded. In the central channels of the tubules cells and their nuclei of various sizes with moderate chromatin content, many cells in the state of mitosis. In the center of individual channels there are necrotic masses. The tissue of the prostate gland consists of particles of various shapes and sizes, almost half of which are cystally enlarged and contain desquamated cells of the glandular epithelium. In the glandular stroke - excess mucus, gluttony with ectasia of blood vessels. The stomach is loose due to edema. The tissues of the penis are blood-filled with severe vascular ecstasy. The tissues of the cavernosum are enlarged, filled with fibrin and erythrocytes. The epithelium of the urethra is partially necrotized throughout its length.

During the study of semen samples by PCR method, clinically and latent patients Chicken breeding chlamydia DNA was detected in all 87 cases without exception.

We believe that the absence of clinical signs and visible pathological changes is a primary factor that leads to the spread of Chlamydia. Adult reproductive animals, remaining clinically healthy, transmit the pathogen to the pigs most affected by this disease. Mortality among newborn piglets can reach 70%. Among the surviving pigs, there was a lag in growth and development, conjunctivitis, lesions of the respiratory and gastrointestinal tract, joints, as well as in individual individuals, the central nervous system.

In the course of healing the dysfunctions of the chlamydia of pig farms, first of all, it is necessary to exclude rodent breeding animals as a source of infection. Infected high-value creatures should be sown with anti-chlamydial drugs (tetracycline antibiotics, fluoroquinolones, macrolides) [4]. It is only possible to use such animals for insemination of sows after confirmation of complete rehabilitation of them from chlamydia. Unfortunately, in 5 - 15% of cases this can not be achieved. Such animals should be discarded for meat regardless of their breeding value. Also, it is necessary to discard from the herds of inferior pectinates, in ejaculates of which the causative agents of chlamydia are found. In order to protect pig-breeding sites from the introduction of chlamydial infection, it is necessary to investigate the chlamydia of all, without exception,

pedigree animals imported from other holdings, during their quarantine, and also periodically check the semen of the breeders for contamination with chlamydia. The most effective in terms of ensuring well-being, not only from chlamydia, but also from other sexually transmitted infections is the practice of artificial insemination. The retention of germ-breeding buds, apart from other sex-age groups of pigs, makes it impossible to infect sows during artificial insemination.

Conclusions

Taking into account the results of epizootiological monitoring of chlamydia of pigs in 105 enterprises producing pork in the pedigree and commodity areas of the 15 oblasts of Ukraine, as well as the fact that the main object of pedigree sale are hooves or their semen, we consider that the pigs of this production group are one from the main sources of chlamydial infection.

Bibliography

1. *Ануфриев П.А.* Хламидиоз свиней/П.А. Ануфриев, С.И. Першина, Н.С. Фролов//Ветеринарный консультант. — 2004. — № 5. — С. 14 – 19.

2. *Бортничук В.А.* Хламидиоз свиней: [спр. пос.]/В.А. Бортничук. — К.: Урожай, 1991. — 192 с.

3. *Венедиктова Л.В.* Генитальный хламидиоз быков, баранов, хряков и кобелей/Л.В. Венедиктова, О.Н. Таллерова//Ветеринарный врач. — 2003. — № 1 (13). — С. 35 – 41.

4. *Ксьонз І.М.* Оздоровчі заходи від хламідіозу свиней/І.М. Ксьонз//Ветеринарна біотехнологія. — 2011. — № 19. — С. 108 – 113.

5. *Ксьонз І.М.* Хламідіози тварин: [моногр.]/І.М. Ксьонз. — Полтава: Оріяна, 2012. — 318 с.

6. *Кужільний Г.Я*. Урогенітальні заразні патології: трихомонози, вібріози, хламідіози: [метод. реком.]/Г.Я. Кужільний, А.В. Абрамов. — К.: ЦДЛВМ, 2006. — 49 с.

7. *Кузьмин А.В.* Патоморфология и патогенез хламидиоза свиней: автореф. дис. на соискание. науч. степени канд. вет. наук: спец. 16.00.02 «Патология, онкология и морфология животных»/А.В. Кузьмин. — Саранск, 1999. — 20 с.

8. *Обухов И.Л.* Хламидиоз (*Chlamydios*)/И. Обухов, Д. Васильев. — Ульяновск, 2003. — 135 с.

9. *Пат*. 51635 Україна, МПК A 61 K 39/118. Спосіб визначення ДНК бактерій родини *Chlamydiaceae* у полімеразній ланцюговій реакції шляхом ампліфікації фрагмента гена головного білка мембрани (MOMP)/І.М. Ксьонз, К.Ф. Почерняєв; заявн. і власн. Полтавська дослідна станція Інституту ветеринарної медицини УААН; заявл. 19.01.2010; опубл. 26.07.2010, Бюл. № 14.

10. *Пат.* 11834 Україна, МПК A 61 K 39/118. Спосіб визначення ДНК, збудників хламідійних інфекцій у мультиплексній полімеразній ланцюговій реакції/І.М. Ксьонз, К.Ф. Почерняєв, А.Ф. Курман; заявн. і власн. Полтавський філіал Інституту ветеринарної медицини УААН; заявл. 23.06.2005; опубл. 16.01.2006, Бюл. № 1.

11. *Пат.* 34868 Україна, МПК A 61 K 39/118. Спосіб визначення ДНК семи збудників хламідійних інфекцій ссавців і птахів у одній полімеразній ланцюговій реакції/І.М. Ксьонз, К.Ф. Почерняєв; заявн. і власн. І.М. Ксьонз, К.Ф. Почерняєв; заявл. 25.03.2008; опубл. 26.08.2008, Бюл. № 16.

12. *Равилов А.З.* Хламидиоз животных/А.З. Равилов, Х.З. Гафаров, Р.Х. Равилов. — Казань: Фэн, 2004. — 367 с.