

EPIZOOTIC MONITORING OF PATHOGENS CAUSING GASTROINTESTINAL AND RESPIRATORY DISEASES IN CALVES

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Abstract. *The article summarizes the results of the study of epizootological monitoring in 18 livestock farms in the Fergana Valley: in the Andijan region, all the studied farms (8) were unfavorable for infectious pneumoenteritis, in the Fergana region - 5 (83.3%) and the Namangan region - 2 (50%), in the Fergana region as a whole, the corresponding figure was 15 farms.*

Keywords: *pneumoenteritis, cattle, gastroenteritis, gastrointestinal, respiratory, newborn calves, colibacillosis, salmonellosis, pasteurellosis.*

Introduction: Pneumoenteritis of young cattle causes enormous economic damage to livestock: up to 30% of calves under 6 months die annually due to gastrointestinal and respiratory diseases, in addition, pathogenic bacteria and viruses are involved in the pathology of cattle reproduction, also causing significant economic losses. Diseases of the digestive and respiratory systems of young farm animals, including calves, are still found in many livestock farms, affecting more than half of newborn calves.

Many livestock farms often observe diseases of young and adult cattle of mono- and associated bacterial etiology: colibacillosis, salmonellosis, pasteurellosis, proteosis and others, as well as with the participation of mycoplasmas, viruses, protozoa, helminths.

Literature analysis and methodology: Bacterial pathogens of gastrointestinal and respiratory diseases of cattle are registered in all regions of the Fergana Valley, which is also confirmed by the results of our epizootological monitoring in 18 livestock farms of the Fergana Valley: in the Andijan region, all the studied farms (8) were unfavorable for infectious pneumoenteritis, in the Fergana region - 5 (83.3%) and Namangan region - 2 (50%), in the Fergana region as a whole, the corresponding figure was 15 farms (83.3%) (Table 1).

Clinical observations have established a pattern in the occurrence of gastroenteritis and pneumonia. The latter, as a rule, are registered after gastroenteritis and often the pathology occurs in the form of pneumoenteritis. The studies have established that in gastroenteritis and pneumonia of young cattle, the microflora of nasal secretions, feces and parenchymatous organs is represented in most cases by the same taxonomic units, differing only in the frequency of their isolation and the degree of pathogenicity.

To determine the role of microflora in the etiology and pathogenesis of calf diseases, bacteriological studies of 420 samples of pathological material were conducted.

It was found that the largest number of animals sick with infectious enteritis and pneumonia (132 samples, or 42.5%) were in the farms of the Andijan region, and the smallest (19 samples, or 25.0%) were in the Fergana region. The corresponding figure in the Namangan region was 10 samples, or 31.0%, and in general RT - 161 samples (38.3%) (Table 1).

Table 1

Results of bacteriological examination of pathological material from calves (2003 – 2013)

Indicators	Quantity			
	of Farms		Sample	
	Researche d	Unfavorable	Research ed	Positive
Namangan region	4	2 (50)	32	10 (31,0)
Ferghana region	6	5 (83,3)	78	19 (25,0)
Andijan region	8	8 (100)	310	132 (42,5)
Total	18	15 (83,3)	420	161 (38,3)

Note. The percentage value is shown in parentheses.

During bacteriological examination of nasal secretions of patients with pneumonia of calves, pathogenic escherichia, salmonella, pasteurella and non-pathogenic hay bacillus were isolated; the same pathogens and pathogenic proteas were isolated from the feces of patients with gastroenteritis of animals, from parenchymal organs - pasteurella (heart), salmonella (liver, spleen), proteas (spleen), escherichia (kidneys) (Table 2).

Table 2

The results of bacteriological examination of pathological material from sick and fallen calves

Pathological material		Isolated pathogens
Nasal discharge		Escherichia coli, salmonella, pasteurella and non-pathogenic hay bacillus
Feces		Escherichia, protea, salmonella, pasteurella and non-pathogenic hay bacillus
Parenchymal organs	Heart	Pasteurelles
	liver,spleen	Salmonella
	The spleen	Protein
	Kidneys	Escherichia

Gram-negative microorganisms (Escherichia, salmonella, pasteurella and protea) were involved in the etiology of gastroenteritis and pneumonia in young cattle, which are also isolated in various combinations.

Monoinfections occur (according to the isolation of pathogens) in 76.3% of cases (97 isolates), and mixed infections occur as an association of pathogens in 23.7% of the total number of positive samples (Fig. 1).

When studying the cultural and biological properties of the isolated bacterial agents, E. coli was identified in 76 (47.2) samples, Pr. vulgaris in 23 (14.3%), S. dublin in 12 (7.4%) and P. multocida in 4 (2.5%). Bacterial agents in the association of E. coli + Pr. vulgaris were identified in 18 (11.2%) samples, E. coli + S. dublin 7 (4.3%), E. coli + S. dublin + Pr. vulgaris + P. multocida in 5 (3.1%) samples (Fig. 2).

The pathogenicity of pathogens isolated from gastroenteritis from feces was less pronounced, compared with that of pathogens of pneumonia isolated from nasal mucus, and the

virulence of microflora isolated from parenchymal organs in gastroenteritis and pneumonia was almost the same.

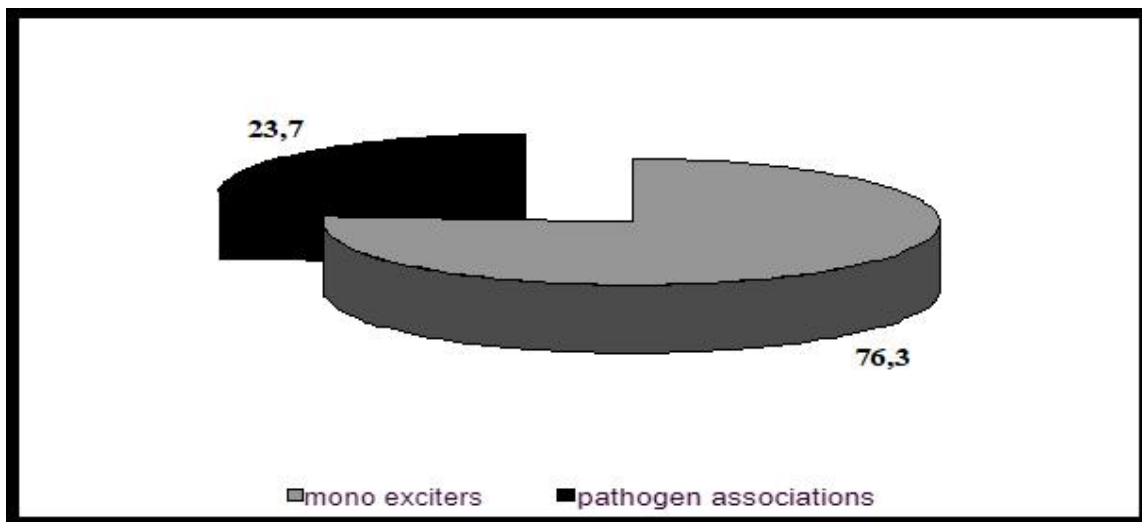


Fig. 1. The ratio of mono- and associated pathogens of infectious pneumoenteritis of young cattle isolated from farms in the Fergana Valley, %.

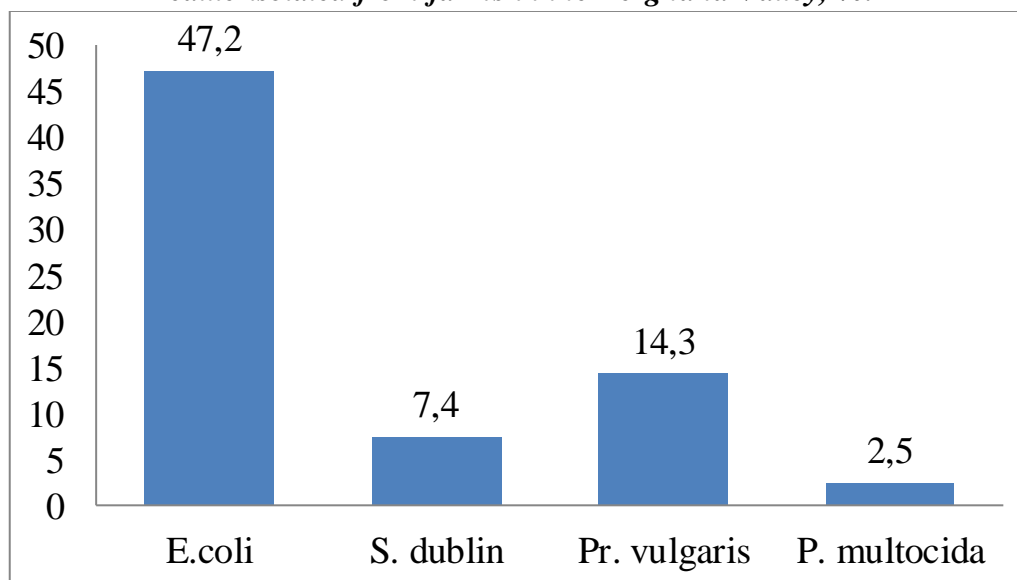


Figure 2. Results of bacteriological examination of sick and fallen calves, %

Conclusion. Thus, it has been established that the main pathogens of gastrointestinal and respiratory diseases of young cattle widespread in the farms of the Fergana Valley are E. coli, S. dublin, Pr. vulgaris and P. multocida, both individually and in associations, which determines the relevance of the development of new complex antibacterial drugs and rational methods of their use.

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