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ANTIGENIC VARIABILITY OF FIMBRIAL ADHESINS OF E.COLI EPIZOOTIC STRAINS

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Colibacillosis heads the nosologic structure of gastro-intestinal diseases of young farm animals and in this connection the great attention is paid to constant improvement of means its diagnostication and specific profilaxis.

Fimbrial adhesins that enable the bacterial cells to epithelial cells and colonize surfaces, are of crucial importance in pathogenesis of colibacillosis. Fimbrial adhesins of seven serological types: K99, F41, Att25, 987P, K88ab, K88ac, K88ad - are the most important.

Fimbrial adhesins have been detected in 109 (51,1 %) cultures of 213 strains of E.coli, isolated from dead calves in husbandries of the Ukraine. Fimbriae K99 and Att25 were the most freqnently registered ones 32,5 % and 20,6 % respectively). The majority of cultures (78,8 %) incorporate mannose-resistant fimbriae of several types that enhance their colonization and adaptation activity.

The existing methods of indication of fimbrial adhesins of E.coli epizootic strains permit to recover their known-already types only.

For this reason we worked out and practically approved the method of testing of adhesive characteristics of E.coli cultures that permits to resover previonsly unknown types of fimbriae.

In compliance with the proposed protocol, E.coli cultures were subjected to agglutination test with monospecific antiadhesive sera to all known types of fimbriae at the first stage. sherichia with positive reaction to, at least, one the antiadhesive sera excluted from the subsequent test. Isolates with negative reaction were subjected to mannoseresistant hemoagglutination test with erythrocytes of different species. Positive results of the test (1:16 dilution and higher) are indicative of availability of mannose-resistante (specific) fimbriae the culture being tested.

There were also isolated theree acttivity of E.coli with mannose-resistant fimbriae, differing in morphological, biochemical and antigenic properties from the previonsly decribed types. They were conventionally desinated as X93, Y93, Z93 and studied as to their properties and pathogenetical significance.

72 E.coli isolates from calves (morbid and dead) and 32 swine isolates were indentified for X93, Y93 and Z93 fimbriae presence in order to determine their pathogenic significance. The obtained data were indicative of the fact that the X93 fimbriae were the most freqnently registered with the E.coli cultures isolated from calves as wellas from pigs (40,0 and 34,3 % respectively); the Z93 fimbriae were recovered with the individual isolates only (5,5 and 9,3 %); the Y93 fimbriae were not recovered at all.

Thus epizootic strains of E.coli can possess much broader range of fimbrial adhesins that was supposed earlier. It should be taken in to consideration when constructing means of diagnosis and specific prophylaxis of colibacillosis on their basis.

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