Therapy and prophylaxis with antibacterial and chemotherapeutic agents, in order to treat or to prevent acute purpura hemorrhagic disorders and urinary tract infections in the cow, are not always successful. One of the reasons for an occasional failure of treatment is a too narrow spectrum of effectiveness of the therapy. A change of microorganisms during or shortly after therapy may occur, and the last mentioned drug, a change of microorganisms was obvious in our experiments, especially when we used a single substance having a high effectiveness against a microbiologically differentiated strain of infectious agents but lacking an effect on certain facultative pathogens of microorganisms which were not or only in small amounts bacteriologically ascertainable. These were previously not realized as infectious agents. Reasons for the ineffectiveness was a natural or acquired resistance of these strains of bacteria to the used substance. In some cases it was not easy to distinguish between changes in endogenous or exogenous superinfection (cross-infection). In selected models of infections of the urinary tract the development of the clinical and cytological symptoms includes the development of the infection, as well as the appearance of the new microorganism, and the clinical symptoms of the infections arising in the same animals were delayed for 2-3 days after starting the treatment. Then they disappeared without further therapy. We conclude from these experiments that Streptococci and Staphylococci had a low pathogenetic index and caused local alterations only. Using AMPICILIN as a single substance to treat acute purpura hemorrhagic disorders a change of bacteria was found too. In some cases primary E. coli infections were followed by infections of Klebsiella, Proteus and Staphylococci.

Discussion and conclusions

The reported cases of change of bacteria demonstrate that Streptococci were the most frequent strain and the change of Streptococci in vitro. E. coli bacteria isolated from urine and the genital tract were sensitive to OLAQUINOX in vitro, whereas Streptococci (S. faecalis, S. liquifaciens, S. faecium, S. ruminantium) were not or only in a limited number of тест, highly resistant to Olaquinox in vitro. When the drug application was stopped there was once again a change of bacteria. The Streptococci were replaced again by relapsing E. coli. The effects of the change of bacteria were different. In case 1 the number of leucocytes during the period of multiplication of the Streptococci. Thus we conclude that the Streptococci did not have pathogenetic properties in contrast to E. coli. On the other hand in case 2 during the predominance of Streptococci the number of leucocytes in urine and vaginal swabs was neither increasing nor disappearing the clinical symptoms. We conclude in this case that the Streptococci had not pathogenetic properties in contrast to E. coli.

Case 3 showed a mixed infection of E. coli and Streptococci in the urinary and genital tract by OLAQUINOX of E. coli, which were considered pathologically more important, did not improve the patient's condition. The remaining Streptococci maintained the disease and even deteriorated the clinical symptoms. In this case we may conclude that the Streptococci did have an etiological importance.

Treatment of cows with urinary tract infections and/or acute purpura hemorrhagic disorders with an AMINOGLYCOIDE-antibiotic was a change of bacteria in 2 cases and by a Staphylococcus aureus infection in 1 case during the initial treatment. However, E. coli strains were highly sensitive to the aminoglycoside antibiotic, while Streptococci were resistant (MIC-value 64 µg/ml), but Staphylococci were sensitive Streptococci as well as Staphylococci were considered not having had etiological importance in the first clinical-microbiological diagnoses. While treating with the aminoglycoside antibiotic, which was only effective against E. coli, a lowering of the body temperature towards normal and an improvement of the general status was noticed in all 3 cases of change of bacteria. But the clinical symptoms of vaginitis or endometritis (purulent flux) as well as the increased number of leucocytes in the urine remained till the 8th day after starting the treatment. Then they disappeared without further therapy. We conclude from these experiments that Streptococci and Staphylococci had a low pathogenic index and caused local alterations only. Using AMPICILIN as a single substance to treat acute purpura hemorrhagic disorders a change of bacteria was found too. In some cases primary E. coli infections were followed by infections of Klebsiella, Proteus and Staphylococci.