



Bacterial and Fungal Contamination of Lower respiratory tract in Horse's Population from Slovak Republic.

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Objective:

We are presenting the results of bacterial and fungal contamination of the lower respiratory tract from 27 horses. The experimental group comprised horses of all age categories and without distinction of sex. Breed representation included: 6 quarter horses and 21 representatives of warm blood breeds. Every tracheal washout was tested for bacterial and fungal agents by laboratory diagnostics. Isolated bacterial agents from diagnostic specimens were used for the disc diffusion antimicrobial susceptibility test method (Kirby-Bauer plates).



Material and Methods:

Microbiological material was obtained by Transtracheal Aspiration (TTA).

Indications for TTA: Bilateral mucous discharge from nostrils,
Chronic cough,
Exercise intolerance,
Pathological auscultatory findings
Failure of the previous antibiotic treatment.



For TTA we used sterile Central venous catheter (Cava fix Certo, Braun), which was inserted between tracheal rings at the level between lower and middle third of the ventral part of the neck over the junction of sternomandibular muscles.

Tracheal puncture was performed by trocar needle (length 10 cm; inside diameter 14 G) on sedated standing horse.

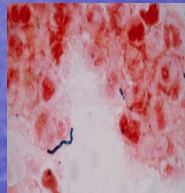
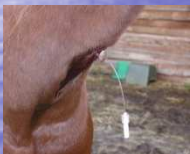
Puncture was done under sterile conditions.

Skin incision 1 cm long was done as well.

After the needle insertion through the intertracheal ligament, tip of the needle was directed downward and catheter was inserted using over the needle-technique.

Tracheal washout was performed by two syringes with sterile Ringer solution from the place above the tracheal bifurcation. The swabs in Stuart's medium were used in the transport samples for laboratory examination. Standard laboratory methods were used to determine species of microbiological agents in the samples.

Kirby-Bauer plates were used for testing antimicrobial susceptibility.



Results:

Bacteriological results:

Gram-Positive Aerobic Cocci: *Streptococcus agalactiae*, *Streptococcus faecalis*, β haemolytic streptococci, *Staphylococcus aureus*, coagulase negative *Staphylococcus*.

Gram-Negative Bacteria: *Pasteurella multocida*, *Klebsiella pneumoniae*, *Bordetella bronchiseptica*, *Pseudomonas spp.*, *Proteus spp.*, *Escherichia coli*, haemolytic *E.coli*.

Mycological results:

Aspergillus flavus, *Aspergillus fumigatus*, *Mucor spp.*, *Rhizopus spp.*, *Penicillium spp.*, *Candida spp.*

Bacterial cultivation was negative in 11 cases and mycological findings were always accompanied by bacterial microflora.

Conclusion:

Transtracheal aspiration is a diagnostic method of choice in case of failure of previous antibiotic treatments, as well as in cases with high risk of microbial resistance for antibiotics of first choice.

Results obtained from TTA are important to detect the presence of bacterial and fungal agents in horse populations and as well for monitoring bacterial resistance.

The method is very simple and safe for horses and the vets.

The equipment for TTA is very cheap in comparison with tracheal washout through accessory channel with sterile catheter by fiberoptic or video bronchoendoscope. Tracheal washout from TTA is not suitable for cytological examination in comparison with washout from Broncho-Alveolar Lavage because cytological findings can be affected by pathological process in the trachea or the upper respiratory tract.

Cytological confirmation by TTA of Recurrent Airways Obstruction (RAO) is not recommended. But it can be recommended for horses with this diagnosis after the onset of airways obstruction, because every bronchopulmonary infection is accompanied by an increase of bronchoalveolar secretion and stiffness of mucus. And this process decreases the natural immunological response of the bronchoalveolar tree and increases the possibility of bacterial and fungal contamination of the lower respiratory tract in horses.