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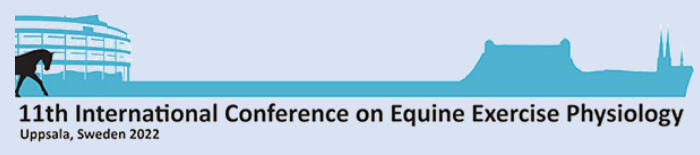
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# CORRELATION BETWEEN CYTOLOGIC AND MICROBIAL RESPIRATORY PROFILES AND PERFORMANCE IN FRENCH TROTTERS

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**Objective:** Investigate a possible association between cytological, mycological and bacteriological profiles of the respiratory tract of racehorses and the level of performance

Materials and methods:

Standardbred racehorses

*Modified performance scoring*

*(out of 4 based on the podiums ratio, earnings, national index and ranking)*

Good performers

Poor performers

Clinical evaluation

Bilateral Broncho-Alveolar Lavage « BAL »

Tracheal Wash « TW »

Bilateral Guttural Pouch Lavage « GPL »

- Cytodiagnosis consistent with moderate Equine Asthma « mEA »: *neutrophils* > 5%, *eosinophils* > 1% or *mast cells* > 2% in BAL<sup>1</sup>
- Cytodiagnosis consistent with Exercise-Induced Pulmonary Hemorrhage « EIPH »: *hemosiderophages/macrophages ratio* > 20% in BAL<sup>2</sup>

- Fungal element: *Cytology + mycology on TW & BAL*
- Cytodiagnosis consistent with Tracheal Inflammation Syndrome « TIS »: *neutrophils* > 20% in TW<sup>3</sup>
- Mycoplasma: *PCR on TW*
- Bacteria: *Bacteriology on TW*

Results & Discussion:

*Statistical analysis: Mann-Whitney or Chi-square test (P-value < 0,05)*

GOOD PERFORMERS

12

*Homogeneous: gender, age, living environment*

20

POOR PERFORMERS

Higher prevalence of:

- mEA (cytodiagnosis)
- EIPH (cytodiagnosis)

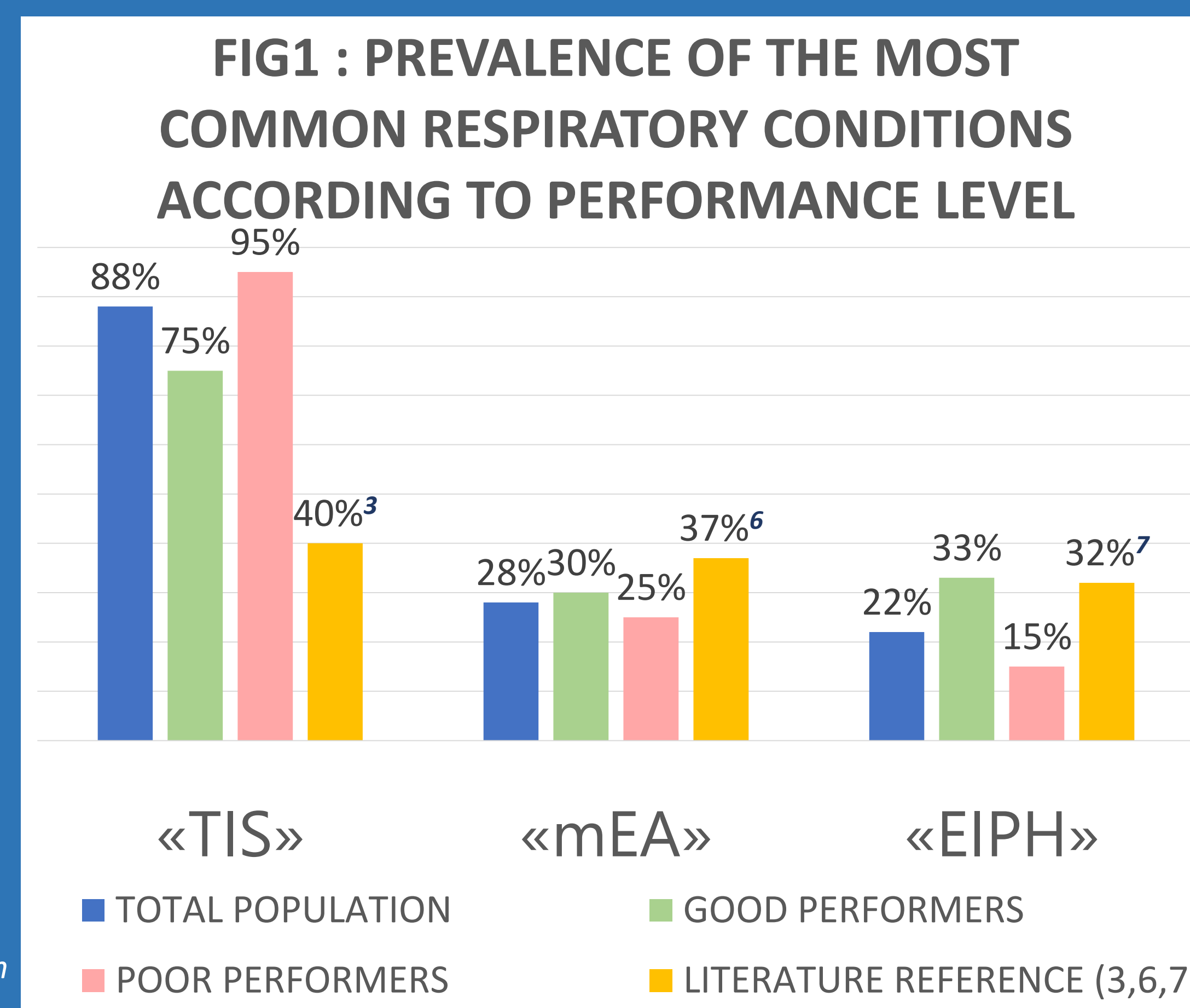
*Statistically significant difference (p-value = 0,041)*

*No statistically significant difference*

Higher prevalence of:

- Higher respiratory rate
- Abnormal respiratory auscultation
- TIS (cytodiagnosis)
- Bacteria (including mycoplasma) in the TW

*Crispe et al (2017)<sup>4</sup>: a low-grade EIPH would not decrease performance. It would be a sign of a more intense exercise.*  
*Morley et al (2015)<sup>5</sup>: a non-EIPH horse would be >2 times more likely to win races.*



- *Fungal colonization of the airways was not associated with poor performance.*
- *BAL seems to be more specific than TW<sup>8</sup>: Mycology (+) on BAL pool = 9% Mycology (+) on TW = 96%*

<sup>8</sup> Lemonnier, L.C. et al (2022) - Variability of fungi detection in the respiratory tract of racehorses according to the sampling site (ICEEP, Sweden)

Conclusion & limits:

- Innovative and interesting database
- Methodological biases: number of individuals included, performance measurement
- The relationship between airway colonization by bacterial or fungal elements and the link with performance remains to be proven : Pilot study
- Search for fungal elements: *Is the BAL more specific than the TW ?*