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Abstract Book

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Highly pathogenic *Aeromonas hydrophila* in swine

Duarte EL^{1,2}, Queiroga MC^{1,2}, Saavedra MJ^{3,4}

¹Departamento de Medicina Veterinária, Escola de Ciências e Tecnologia, Universidade de Évora, Évora, Portugal

²ICAAM-Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Universidade de Évora, Évora, Portugal

³Departamento de Ciências Veterinárias, Lab. Microbiologia Médica, Escola de Ciências Agrárias e Veterinárias

⁴Centro de Ciência Animal e Veterinária (CECAV), Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal

OBJECTIVE

Autochthonous Iberian pig breeds have been growingly popular due to the increasing demand for locally and extensively produced animals. Due to their different production system, microbiological hazards significantly diverge from industrially reared animals. Within the frame of a broader study to characterize specific pathogens associated with Alentejano pig breed, *Aeromonas hydrophila* was isolated in pure culture from collected organs of septicemic piglets from two farms. These farms had no epidemiological link between them to our knowledge. As *A. hydrophila* is seldom the cause of septicemia in mammals, antimicrobial resistance profile and virulence factors were investigated for these two strains.

MATERIALS/METHODS

Aeromonas hydrophila were phylogenetic characterized using *gyrB* gene sequencing. Antimicrobial resistance profile and the production of extracellular lipases and proteases was evaluated. The presence of several genetic determinants of resistance and virulence were determined by PCR: aminoglycoside resistance associated genes (acetyltransferases-AAC-, phosphotransferases-APH- and nucleotidiltransferases-ANT), genes encoding lipases and aerolysin-related toxins and type III secretion system.

RESULTS

Identification was confirmed by *gyrB* sequencing. *A. hydrophila* isolate from farm 1 was sensitive to gentamicin, oxytetracycline, neomycin, enrofloxacin, colistin sulfate, trimethoprim, ceftiofur and amoxicillin/ clavulanic acid. *A. hydrophila* from farm 2 was resistant to all antibiotics except enrofloxacin. This isolate harboured APH(6)-I and ANT(6)-I genes, but no AAC genes. Genes for all virulence factors tested were present in both isolates. Moreover, all strains displayed lipolytic and proteolytic activity under the conditions tested.

CONCLUSION

Although described in immunocompromised humans or as a secondary pathogen, *Aeromonas hydrophila* has been unfrequently reported as a cause of septicemia in mammals. The occurrence of several virulence determinants in these emergent pathogens, their multiple resistance profile, along with their ubiquitous nature in terrestrial and aquatic environments, is prone to rise a significant concern to animal health and veterinary microbiologists in the near future.

REFERENCES

- [1] J.M. Janda, S.L. Abbott, *Clinical Microbiology Reviews* 23 (2010) 35-73.
- [2] C.R. Rasmussen-Ivey, M. Figueras, D. McGarey, M.R. Liles, *Frontiers in Microbiology* (2016) doi: 10.3389/fmicb.2016.01337
- [3] M. C. Queiroga, A. S. P. Amaral, S. M. Branco, *Spanish Journal of Agricultural Research* 10 (2012) 383-387.
- [4] M.J Saavedra, M. Figueras, A. Martínez-Murcia., *International Journal Systematic and Evolutionary Microbiology* 56 (2006) 2481-2487.