AEROMONAS-TOXINFECTIONS: AN UNDERESTIMATED PATHOGEN

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Aeromonas spp. are autochthonous inhabitants of aquatic environments that may be readily isolated from drinking-water and a wide range of raw foods. Their ecological distribution leads to the assumption that the majority of aeromonas-zoonoses are waterborne, with the main risk of acquiring Aeromonas-associated infections being by direct contact with water or by consumption of raw food products. Toxinfections caused by Aeromonas spp. have been significantly underestimated and in order to fully determine and pinpoint the risk factors associated with Aeromonas infection there is a need for more detailed studies.

In the present investigation we analyzed 73 samples from drinking-water, food and food-processing surfaces. After growth in differential medium we recovered a total of 176 isolates, 56% of which were allocated to the Aeromonas genus after phenotypic and molecular methods. For comparison purposes we received, and included in our microbial collection, 120 aeromonads from collaborating laboratories, representing various origins/countries worldwide. To analyze the genetic diversity and establish the similarity between the isolates we performed PCR-fingerprinting with primers 1281 and OPC19 in independent amplification reactions. Analysis of the dendrogram, built with the BioNumerics software, evidenced the high diversity of the microbial collection (Simpson’s Diversity Index of 0.99) and showed that the Aeromonas spp. under analysis are characteristic of the environment from which they were isolated (e.g. food versus clinical). To further assess for the health-risk associated with the consumption of water/food harboring Aeromonas spp. the food-related isolates need to be evaluated regarding their antimicrobial resistance and virulence potential.