RESEARCH NOTE

SEROTYPE, SEQUENCE TYPE AND ANTIBIOGRAM PROFILE OF *LISTERIA MONOCYTOGENES* ISOLATES FROM RETAIL FOOD IN SINGAPORE (2010 - 2016)

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Abstract. *Listeria monocytogenes* infection can be acquired through consumption of contaminated food, which can lead to serious adverse outcome, particularly among pregnant women and immunocompromised individuals. There is currently a limited information on risk posed by *Listeria* in food in Singapore, and thus a better understanding of the characteristics (serotype, sequence type and antibiogram profile) of *L. monocytogenes* detected in food would be useful to public health practitioners in assessment of food safety in country. This study aimed to determine the serotypes, sequence types and antimicrobial resistance profiles, and assess the food safety relevance, of *L. monocytogenes* isolated from ready-to-eat retail food in Singapore. A total of 60 *L. monocytogenes* isolates obtained from ready-to-eat retail food between 2010 and 2016 were subjected to conventional serotyping, multi-locus sequence typing and disc diffusion assay against 12 antimicrobial agents. Detection of clinically relevant serotypes, namely, 4b (53.3%) and 1/2b (18.3%) highlighted possible food safety concern. Multi-locus sequence typing showed 98% of the isolates belonged to sequence types that had been reported in clinical cases overseas, suggesting their potential to cause disease. Some 85% of isolates were resistant to at least one antimicrobial agent, including general drugs used for treating invasive listeriosis, such as penicillin and ampicillin. These findings are in line with global growing concerns and reinforce the need to heighten awareness of the emerging risk of antimicrobial resistance in foodborne pathogens. In addition, the data provide baseline information on local foodborne *L. monocytogenes* characteristics that should be of use in comparison with other environmental and human isolates to elucidate contamination and transmission routes of *L. monocytogenes* in Singapore.

Keywords: *Listeria monocytogenes*, serotypes, sequence types, antibiogram, retail food

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