Battling the silent killer: An insight into listeriosis.

Erin Jacob*

Department of Nutrition and Food Science, 0102 Skinner Building, University of Maryland, Maryland, United States

Abstract

Listeriosis is a potentially fatal invasive disease that mostly affects pregnant women, newborns, and immune compromised adults. *Listeria monocytogenes*, the pathogenic organism, is primarily transferred to people through contaminated foods. Listeriosis outbreaks have been documented in North America, Europe, and Japan. Soft cheeses made from raw milk and ready-to-eat meats are high risk foods for those who are vulnerable. Food processors' and regulatory authorities' efforts to aggressively manage *L. monocytogenes* in high-risk foods have resulted in significant reductions in the occurrence of sporadic listeriosis.

Introduction

It was not until it caused a large outbreak of invasive disease with a high case-fatality rate in the Maritime Provinces in Canada that it was recognized as a serious public health problem. This outbreak for the first time demonstrated *L. monocytogenes* as a foodborne pathogen and it is now believed that most cases of human listeriosis are foodborne. Since this outbreak there has been a tremendous interest in elucidating the epidemiology of this organism in order to protect the consumer against listeriosis in the most cost-effective manner. The bacterium possesses properties that favour it as a foodborne pathogen: at variance with most other pathogens it is relatively resistant to acid and high salt concentrations; it grows at low temperature, down to freezing point, which mean it may grow in refrigerated foods. Before the development of Listeria selective media, this property was used for selective enrichment of the bacterium from complex matrices, with Listeria outnumbering the competing flora after incubation of the enrichment culture at refrigerator temperature for weeks or months [1]. Additionally *L. monocytogenes* readily produces biofilm that helps it to survive for prolonged periods in food production plants; an example of survival for more than 10 years in the same production environment has been described.

Listeria monocytogenes' antimicrobial susceptibility and treatment of listeriosis

Penicillins, aminoglycosides, trimethoprim, tetracycline, macrolides, and vancomycin are inherently susceptible to *L. monocytogenes* isolates. They are less vulnerable to or resistant to sulfomethoxazole, cephalosporins, and old quinolones, but are normally responsive to fluoroquinolones. Antimicrobial resistance in clinical strains is uncommon, however it has been observed in a considerable number of animal isolates [2].

Listeriosis is a foodborne illness caused by the bacterium *Listeria monocytogenes*. The bacterium is found in soil and water, and it can survive and grow in a variety of environments, including refrigerated and frozen foods. Listeria can cause serious infections in people with weakened immune systems, such as the elderly, pregnant women, and those with certain chronic medical conditions [3]. Symptoms of listeriosis include fever, muscle aches, headache, and sometimes nausea and diarrhoea. If the infection spreads to the nervous system, it can cause meningitis and encephalitis, leading to symptoms such as confusion, stiff neck, and loss of balance. In severe cases, listeriosis can also cause septicaemia, a life-threatening infection of the bloodstream. Pregnant women are at a higher risk of developing listeriosis and can pass the infection on to their unborn child, leading to miscarriage, stillbirth, or severe infections in the new born. For this reason, it is particularly important for pregnant women to take precautions to avoid listeria [4]. To reduce the risk of listeriosis, it is important to follow safe food handling practices, such as washing hands and kitchen surfaces frequently, storing and cooking food properly, and avoiding high-risk foods, such as raw or undercooked meat, raw dairy products, and unpasteurized juices. High-risk populations, such as pregnant women, the elderly, and people with weakened immune systems, should take extra precautions to avoid listeria, such as avoiding raw or undercooked meat, raw dairy products, and soft cheeses made from unpasteurized milk. In addition, these populations should take care to thoroughly cook leftovers and to consume food as soon as possible after preparation [5].

Conclusion

Listeriosis is a serious foodborne illness caused by the bacterium *Listeria monocytogenes*. It can cause severe infections in people with weakened immune systems and can lead to miscarriage, stillbirth, or severe infections in new-

***Correspondence to:** Erin Jacob, Department of Nutrition and Food Science, 0102 Skinner Building, University of Maryland, Maryland, United States, E mail: Jacobe@umd.edu

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borns. To reduce the risk of listeriosis, it is important to follow safe food handling practices and to take extra precautions, particularly for high-risk populations.

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