Listeriosis in Pregnancy: Practitioners' Food Safety Counselling Practices to Pregnant Women

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Abstract

Objective: The relative risk of invasive listeriosis in pregnant women is approximately 20 times greater than the general population, and listeriosis during pregnancy can have negative consequences for pregnant women, their fetuses, and their newborns. Health care providers are valuable sources of information, but published data suggest that most providers are unaware of the risk factors for listeriosis or its propensity for pregnant women, and they do not counsel their pregnant patients about risks. The objective of this study was to determine knowledge and practices of Canadian perinatal care providers on food safety counselling to pregnant women.

Methods: An anonymous bilingual online questionnaire that sought information about awareness, knowledge of risk factors, practices for counselling pregnant women, and practitioners' learning needs with regard to listeriosis was sent to 3199 nurses, midwives, family physicians, and obstetrician/gynaecologists in Canada, with a response rate of 24.4%.

Results: Most respondents had heard of listeriosis, provided prenatal care, and attended deliveries. Rates of awareness of listeriosis were the same among professions and were independent of years in practice, whether practice was urban or rural, and province.

One third of the respondents (35.7%) were aware that listeriosis was more common in pregnant women; a minority (18.7%) correctly identified the incubation period for listeriosis and the stage in pregnancy in which women are at highest risk (30.4%).

Those respondents who did not counsel women about the risks of listeriosis during pregnancy reported a lack of information or knowledge as the main reason.

Conclusion: Advising pregnant women about behaviours and lifestyle habits to prevent infectious diseases remains important, and information about preventive practices needs to be complete and adequate. The health care providers who participated in this study did express a clear need for information related to food safety during pregnancy and listeriosis, as supported by their lack of knowledge in some areas. If that lack is remedied, the knowledge gained could improve counselling practices.

Key Words: Pregnancy, food safety, listeriosis

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Résumé

Objectif : Les femmes enceintes courent un risque de listériose invasive 20 plus élevé que la population générale. La listériose pendant la grossesse peut avoir de graves conséquences pour la femme, le fœtus et le nouveau-né. Les fournisseurs de soins sont de précieuses sources d'information pour les patientes. Toutefois, d'après les données publiées, la plupart d'entre eux ignorent les facteurs de risque de la listériose, ne savent pas qu'elle touche plus souvent les femmes enceintes et ne conseillent pas ces dernières sur les risques qu'elles courent. Cette étude avait pour but d'évaluer les connaissances et les pratiques des fournisseurs de soins périnataux en ce qui concerne la prestation de conseils sur la salubrité alimentaire aux femmes enceintes.

Méthodologie : Nous avons envoyé un questionnaire bilingue anonyme en ligne à 3 199 infirmières, sages-femmes, médecins de famille et obstétriciens-gynécologues canadiens afin de recueillir des renseignements sur leur sensibilisation, leur connaissance des facteurs de risque, leurs pratiques de prestation de conseils et leurs besoins d'apprentissage en matière de listériose. Le taux de réponse a été de 24,4 %.

Résultats : La plupart des répondants avaient déjà entendu parler de la listériose, fournissaient des soins prénataux et participaient à des accouchements. Le taux de sensibilisation était le même d'une profession à l'autre, et ne variait pas selon le nombre d'années, le lieu de pratique (milieu urbain ou rural) ou la province. Le tiers des répondants (35,7 %) savaient que la listériose touche plus souvent les femmes enceintes; une minorité connaissait la période d'incubation de la listériose (18,7 %) et le stade de la grossesse où les femmes courent le plus grand risque (30,4 %). La principale raison pour laquelle les répondants ne conseillaient pas les femmes sur les risques de la listériose pendant la grossesse était le manque de renseignements ou de connaissances.

Conclusion : Il demeure important de conseiller les femmes enceintes sur les comportements et les habitudes à adopter pour prévenir les maladies infectieuses, et les renseignements donnés doivent être complets et adéquats. Les fournisseurs de soins qui ont participé à cette étude avaient manifestement besoin de renseignements sur la listériose et la salubrité alimentaire pendant la grossesse, comme en témoigne leur manque de connaissances à certains égards. Combler les lacunes dans les connaissances pourrait améliorer les pratiques de prestations de conseils.

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INTRODUCTION

Over the past 25 years, changing patterns of food production and consumption, as well as changing population demographics, have led to foodborne illness outbreaks, and patterns are anticipated to increase with climate change and altered environmental conditions.[1] Although most individuals only have short-lived symptoms and fully recover, food poisoning can result in chronic health problems and sometimes even death, especially in more vulnerable populations. Morbidity and mortality surveillance figures identify an average of 4 million illnesses (1 in 8 Canadians), 11 500 hospitalizations, and 215 deaths per year attributed to foodborne illness.[2]

Canada has experienced a number of listeriosis outbreaks in recent years.[3–5] *Listeria* is an environmentally ubiquitous gram-positive bacterium found in soil and vegetation, sewage, water, animal feeds, and food processing environments[6]; its pathogenic species *L. monocytogenes* infects domestic animals (i.e., cattle, sheep, goats, horses, poultry) and has also been found in wild birds, fish, and shellfish.[7] *L. monocytogenes* can multiply at refrigeration temperatures, form biofilms on different materials and under various conditions, resist a range of environmental stresses, and contaminate food products by cross-contamination.[8] Listeriosis, caused by *L. monocytogenes,* appears to be increasing in incidence worldwide.[9] *Listeria* is the most lethal of the bacteria that cause food poisoning, and despite the relatively low incidence, a rate of 20 to 30 deaths per 100 cases of illness has been documented.[10–12] During pregnancy, a woman's immune system is compromised, and she is at an increased risk of infection and illness. In particular, the relative risk of listeriosis in pregnant women is approximately 115 times higher than in non-pregnant women of child-bearing age,[13,14] and 16% to 27% of all infections with *Listeria* occur in pregnant women.[13,15,16] Listeriosis occurs mainly in the third trimester, perhaps as a result of deficient cell-mediated immunity[17]; however, cases have been observed at earlier GAs.[18,19]

The few published studies indicated that spontaneous abortion (10% to 20%), preterm birth (50%), intrauterine fetal death (11%), and meconium staining of the amniotic fluid (75%)[20,21] are all associated with listeriosis during pregnancy. To date, there has been no published listeriosis-related maternal mortality information in the United States between 2006 and 2014,[22,23] nor could any mortality data be found that was published from other parts of the world,[11] but two thirds of surviving infants develop clinical neonatal listeriosis, and the mortality rate in these infants is high (20% to 60%).[21] Infected newborns may also develop pneumonia, sepsis, and meningitis.[24,25] A challenging aspect of listeriosis is that the maternal effects tend to be mild, but the fetal effects can be severe.

Improved education concerning listeriosis, its transmission, and prevention measures for immunocompromised individuals and pregnant women has been identified as a pressing need.[26,27] Several studies suggested that pregnant women require more information on food safety during pregnancy, including information on listeriosis.[27–29] Health care providers were not a significant source of information for pregnant women.[30,31]

One study showed that many pregnant women are appropriately avoiding risk behaviour, without knowing what they are avoiding.[28] A British Columbia study that surveyed pregnant women's knowledge, practices, and needs related to food safety and listeriosis reported that food safety and the risk of listeriosis were important to respondents during pregnancy; however, their knowledge of high-risk foods and safe food practices was limited.[31] The women acknowledged that their health care providers should be valuable sources of information, but they felt there were barriers to obtaining information from these providers. Participants reported doing their own research using books, websites, and social networks.[32] The present study expands the data to other types of health practitioners and extends the reach across Canada.

Another British Columbia survey was administered to health care providers to determine the knowledge, counselling practices, and learning needs related to risk factors for listeriosis in pregnancy. Data suggested that most prenatal care providers in British Columbia were unaware of the risk factors for listeriosis and its propensity for pregnant women, and they did not counsel their pregnant patients about these risks.[33] In another study, Australian midwives in three hospitals had a range of approaches, from active to passive, to *Listeria* education. The main education provided was focused only on some of the high–*Listeria* risk foods with little education on safe food-handling practices, a finding suggesting that professional practice guidelines regarding food safety and *Listeria* education are needed, together with relevant professional training.[31]