

4 ENTERIC DISEASES

a Listeriosis—an apparent cluster of cases in Western Cape Province

During September 2015, an increased number of cases of *Listeria monocytogenes* were isolated at NHLS Groote Schuur laboratory: seven cases had been identified since the beginning of 2015, with six occurring between June 2015 and September 2015. Clinical information was available for these six cases, of which four were related to pregnancy, or were infants who had been diagnosed post-partum. Two cases, both adults, had underlying conditions, namely chronic obstructive pulmonary disease and multiple myeloma. One of these patients died. In order to determine whether the cases were epidemiologically linked, attempts were made to contact patients for an interview using a standard case investigation questionnaire. Three interviews were conducted with pregnancy-related cases. In addition to pregnancy, all three cases had additional epidemiological risk factors for *Listeria* acquisition. The mother of case one worked at a farm three months prior giving birth, planting and harvesting spinach, cucumber and beans in tunnels, while sometimes consuming these foods. She also frequently ate unrefrigerated left-overs. The mother of case two occasionally ate raw fruit while pregnant and case three exclusively consumed ready-to-eat foods such as deli meat and Greek salad three months prior giving birth. No epidemiologic link between these cases has been identified as yet. Six of the isolates have been sent to the Centre for Enteric Diseases at the NICD for molecular genotyping which is ongoing.

Preliminary analysis of listeriosis cases (meningitis and bacteremia) in the Western Cape Province (extracted from the Cooperate Data Warehouse of the National Health Laboratory Services) from January 2012 to September 2015 was done to assess trends in isolation rates. During this period, 72 cases were identified in the Western Cape Province, with fewer cases identified during 2014 compared to other years. Figure 8 shows the distribution of cases by age, gender and year.

Listeria monocytogenes are Gram-positive bacilli, capable of growing at temperatures of 4°C. They may resemble diphtheroids or short chains of streptococci on Gram's stain and therefore be missed on blood culture or cerebrospinal fluid specimens. When over-decolourised, they may be misidentified as *Haemophilus* species. Low concentrations of organisms in the CSF may also lead to false negative CSF culture, and 10 ml of CSF should be collected to optimise diagnostics. The

organisms may grow slowly and cold enrichment (incubation of cultures at 4°C) may be required to recover isolates in mixed infections.

Although listeriosis is a relatively rare disease (global incidence of 0.337 per 100 000 people in 2010), it has an estimated global mortality of 24% and a 93% hospitalisation rate. The incidence of listeriosis is at least 10 times higher among pregnant women compared to the general population. In pregnant women, listeriosis precipitates premature labour, or leads to intra-uterine death. Neonates who acquire listeriosis transplacentally may develop septicaemia with or without meningitis. Long-term post-infectious sequelae in neonatal disease include intellectual disability, which may be severe, epilepsy, motor impairment, hearing and vision loss. Infection in older patients is frequently associated with severe immune-suppressive conditions including HIV, malignancy and transplants. *Listeria monocytogenes* was first recognised by WHO as a foodborne pathogen in the 1980s, with soft cheeses recognised as the main sources of listeriosis during outbreaks. Outbreaks associated with raw meat, pâté, fresh produce, seafood and other milk products have since been documented.

Optimal treatment of invasive listeriosis includes ampicillin at high doses. An aminoglycoside may be added for synergy. Treatment should be continued for up to two weeks. Second-line treatments include trimethoprim/sulfamethoxazole, erythromycin, vancomycin and fluoroquinolones. *L. monocytogenes* is resistant to cephalosporin antibiotics.

Although there was no common exposure identified among these patients from the Western Cape, persons who are at risk for listeriosis—those with underlying immunocompromising conditions, and pregnant women should avoid known risks, namely unpasteurised milk and milk products, uncooked or undercooked meat, poultry and fish products.

Source: Centre for Enteric Diseases, Field Epidemiology Training Programme, NICD-NHLS

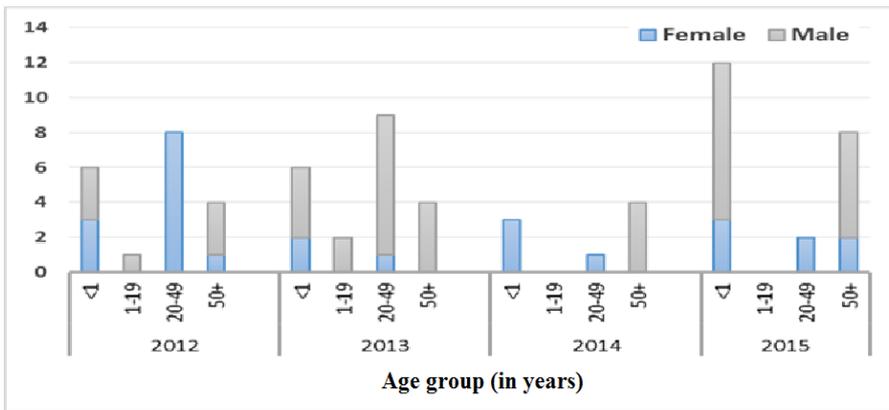


Figure 8. Cases of listeriosis identified by NHLS laboratories in Western Cape Province, 2012 – 2015 by age group and gender. Data courtesy Central Data Warehouse, NHLS.