Increased incidence of Neisseria meningitidis infections in Nuevo León, Mexico

Dear editor: Neisseria meningitidis is a Gram-negative organism associated with serious diseases; while 13 meningococcal serogroups have been described, most cases are associated with serogroups; A, B, C, X, Y and W.1 The General Epidemiology Department (DGE, by its acronym in Spanish) of Mexico reported 37 cases of meningococcal meningitis in 2017 (0.02 cases per 100,000 persons) and 20 cases in the first semester of 2018, none of them from the state of Nuevo León.2,3

Between August 2018 and March 2019, our laboratory confirmed 10 cases of meningococcal infection; with eight patients from the university hospital and two from two other hospitals.

A confirmed case was defined as described by the CDC. The isolates were identified by MALDI-TOF and the subgroup by standard agglutination. Seven of the 10 cases were meningococcal meningitis, and the other three were respiratory infections.

The cases of meningitis presented the classic signs and symptoms of meningitis plus the purpuric lesions characteristic of meningococcemia. All but one of the patients were adults. The most important laboratory characteristics are listed in table I. Serotyping was performed in eight out of the 10 patients, with three isolates detected to be C, three Y and two W.

The case fatality ratio was 30% (3/10). Two fatalities presented invasive meningococcal disease, developed septic shock, multiple organ failure, and ultimately succumbed. Out of the three patients with respiratory isolates, two were patients with pneumonia and one had pulmonary infiltrates believed to be metastatic without signs or symptoms of pneumonia. The cumulative incidence was calculated as 0.27 per 100,000 persons for meningitis/ meningococcemia and 0.39 per 100,000 persons for all meningococcal infection during the study period.4 None of the patients had a history of meningococcal vaccination nor were they epidemiologically linked with one another. All close contacts and exposed healthcare personnel received prophylaxis with either ciprofloxacin or ceftriaxone, and none of them developed an infection.

The active surveillance of N. meningitidis during the last 13 years showed that this species is the main cause of bacterial meningitis in the pediatric population in Tijuana, a city in northern Mexico, bordering San Diego CA, USA.5 In that study, the predominant serotypes were C, Y and B. In our report, the serotypes were C, Y and W.

The increasing number of cases have a special impact on several levels; on healthcare professionals and the public due to potential exposure (in most cases) without previous vaccination. In addition, the national and international epidemiologic repercussions such as a high bilateral flow of the local and migrant population that use this region as passage since Nuevo León is a bordering state with the United States of America.

This work reports the considerable increase in the number of cases of infection by N. meningitidis in Nuevo León, with the notable circulation of serogroup W, which has an increasing incidence and has been reported in Africa, South America, but has not been predominant in Mexico or on the border between the United States and Mexico.6 It is important to increase epidemiological surveillance and reevaluate the primary prevention strategy.

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References


Chécate, midete, muévete, which has been accepted and well received by the objective population. Health authorities, together with non-profit organizations, such as the Mexican Cerebrovascular Disease (Amevasc, by its acronym in Spanish) and academic institutions must work together to foster knowledge of stroke and correct interpretation of symptoms to increase the thrombolysis rate and reduce the disability after stroke.

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Table I

**Description of the patients' characteristics. Hospital Universitario Dr. José Eleuterio González, Monterrey, Mexico. July 2019**

<table>
<thead>
<tr>
<th>Pt</th>
<th>Date (m/y)</th>
<th>Gen/Age (years)</th>
<th>CC</th>
<th>Blood</th>
<th>CSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/18</td>
<td>M/21</td>
<td>None</td>
<td>WBC 25.8</td>
<td>Plat 89.4</td>
</tr>
<tr>
<td>2</td>
<td>9/18</td>
<td>M/56</td>
<td>None</td>
<td>WBC 12.2</td>
<td>Plat 94.5</td>
</tr>
<tr>
<td>3</td>
<td>10/18</td>
<td>F/44</td>
<td>None</td>
<td>WBC 54.2</td>
<td>Plat 201</td>
</tr>
<tr>
<td>4</td>
<td>11/18</td>
<td>F/53</td>
<td>Lung cancer</td>
<td>WBC 10.2</td>
<td>Plat 207</td>
</tr>
<tr>
<td>5</td>
<td>02/19</td>
<td>F/62</td>
<td>None</td>
<td>WBC ND</td>
<td>Plat ND</td>
</tr>
<tr>
<td>6</td>
<td>02/19</td>
<td>F/39</td>
<td>Surgery</td>
<td>WBC 11.7</td>
<td>Plat 204</td>
</tr>
<tr>
<td>7</td>
<td>02/19</td>
<td>F/64</td>
<td>Lung cancer</td>
<td>WBC ND</td>
<td>Plat ND</td>
</tr>
<tr>
<td>8</td>
<td>02/19</td>
<td>F/74</td>
<td>DM/SAH</td>
<td>WBC 42.4</td>
<td>Plat 68.7</td>
</tr>
<tr>
<td>9</td>
<td>03/19</td>
<td>F/4m</td>
<td>None</td>
<td>WBC 23</td>
<td>Plat 338</td>
</tr>
<tr>
<td>10</td>
<td>03/19</td>
<td>F/24</td>
<td>Obesity</td>
<td>WBC 24.6</td>
<td>Plat 165</td>
</tr>
</tbody>
</table>

CC: Complications/Commorbidity; Creat: creatinine; CSF: cerebrospinal fluid; D: Died; DM: Diabetes Mellitus; Gen: Gender; Glu: Glucose; Lact: lactate; ND: no data; O: Outcome; Plat: Platelets; Prot: Proteins; Pt: patient; S: Survived; SAH: systemic arterial hypertension; SG: Serogroup; WBC: white blood cells; BUN: blood urea nitrogen.

**Prostate cancer screening and socioeconomic disparities in Mexican older adults**

Dear editor: With an estimated 1 600 000 new cases and 366 000 deaths every year, prostate cancer (PCa) is the most commonly diagnosed cancer and cancer-related cause of death in men around the world.¹ In Mexico, PCa was one of the most common types of cancer diagnosed in men between 2000 and 2013, having one of the highest cancer-related mortality rates.² It has been pointed out that Mexico lacks a coordinating entity for cancer prevention and control and that the health system is fragmented which has led to inadequate control of patients undergoing PCa testing.³ The present study aimed to seek socioeconomic factors associated with frequency of PCa testing in Mexico. We conducted a cross-sectional analysis...