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Cerebrospinal meningitis: a global disease with regional variability?

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ABSTRACT

Introduction. In this edition, Szymanski *et al.* present the results of their retrospective study of the clinical differences between patients with meningococcal meningitis and pneumococcal cerebrospinal meningitis at the Regional Specialistic Hospital in Wroclaw, Poland.

Clinical reflections. The authors found that compared to patients with *N. meningitidis,* patients with *S. pneumoniae* were older, more frequently had chronic comorbidities, and had higher rates of pneumonia, longer hospitalisations, and higher mortality. Patients with *N. meningitidis* had higher rates of haemorrhagic rash and DIC.

Clinical implications. These characteristics and outcomes reflect previous reports from Western Europe and the United States.

Key words: Meningitis, health care outcomes, sepsis, risk factors

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Bacterial meningitis has an incidence in developed countries of 0.7–0.9 per 100,000, but remains as high as 40 per 100,000 in developing countries [1]. Previously described risk factors include an immonocompromised state such as age (infants and elderly), hyposplenia, HIV/AIDS, cancer, diabetes mellitus, alcoholism, and organ transplantation [2]. Before the advent of antibiotics, meningitis was typically fatal. But with the advent of pathogen-specific antimicrobials, vaccinations towards encapsalated bacteria, and corticosteroids, survival is now nearly 80% [3–5]. Although Europe, especially the Netherlands, has led the way in clinical meningitis research, the differing health systems across the continent may change the clinical characteristics and outcomes of meningitis.

Szymanski *et al.* conducted a retrospective study over a 20-year period at the J. Gromkowski Regional Specialistic Hospital in Wroclaw, Poland [6]. Their study reflected several previously reported characteristics regarding patients with *S. pneumoniae* and *N. meningitidis*. Pneumococcal meningitis patients were more likely to be older and to have chronic disease, to experience a longer delay in diagnosis, and to have lower levels of white blood cells in their CSF, higher rates of pneumonia, longer hospitalisations, and higher mortality. Meningococcal meningitis patients were far more likely to present with headache and vomiting, with over 60% having a haemorraghic rash, and around 30% developing DIC. No patients with menigococcal meningitis died during their study, whereas about 21% of the pneumococcal patients died. These are numbers that reflect Western European and USA experience.

The clinical course of meningitis, including mortality, can vary geographically due to variations in bacterial serotypes, rates of vaccination, rates of immunocompromised states, access to acute healthcare and hospitals, and genetic susceptibility. Most epidemiological work has been done in either Western Europe or North America or in developing countries of South America, Africa, and Asia. This is the first study to have investigated the differences between these diseases in the Polish population. This study shows that Polish patients at this hospital present with typical clinical findings, receive quick and appropriate treatment including corticosteroids (95%), and have similar mortality outcomes to those found in previous studies.

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