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Hospital cost of invasive pneumococcal diseases among children less than 15 year old in Tunisia

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Statement of the Problem: Invasive pneumococcal disease (IPD) caused by *Streptococcus pneumoniae* remains a global health problem and imposes a great burden on society and health care system.

Aim: The objective of this study was to estimate the medical cost of hospitalizations due to IPD (*pneumonia* and *meningitis*) among children under 15 year old in Tunisia, in an effort to provide sufficient data which can help policy makers to assess the need for the vaccine.

Methodology: A prospective multicenter study was conducted in 15 pediatric departments across different socio-economic areas of Tunisia from June 2014 to May 2015. All children under 15 years old who were hospitalized for pneumococcal *pneumonia* or confirmed bacterial meningitis were enrolled. A case report form was completed for every eligible case. Activity based costing method was used to estimate the hospital cost. Data entry and statistical analysis were conducted using SPSS, version 20.0.

Findings: During the study period, 727 children were hospitalized for pneumococcal *pneumonia* and 60 children were hospitalized for bacterial meningitis, among them 21(35%) had confirmed pneumococcal meningitis. The median hospital cost for pneumococcal *pneumonia* was 353.910 TD and it was 1680.632 TD for pneumococcal meningitis. By overall data extrapolation, we estimated that nearly 1091 hospitalizations for pneumococcal *pneumonia* and 69 hospitalizations for pneumococcal meningitis occur each year in Tunisian children under 15 years of age, incurring total costs of 502 079.408 TD.

Conclusion: The economic burden of pneumococcal infections seems to be major in Tunisia, where a safe and effective vaccine is available but has not yet been introduced to immunization schedules.

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Severe skull base osteomyelitis caused by *Pseudomonas aeruginosa* with successful outcome after prolonged outpatient therapy with continuous infusion of ceftazidime and oral ciprofloxacin: A case report

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Skull base osteomyelitis is an uncommon disease that usually complicates a malignant external otitis with temporal bone involvement. It affects predominantly diabetic and immuno compromised males and has a high mortality rate. *Pseudomonas aeruginosa* is the most common causative organism. Currently, there is no consensus about the best therapeutic option. Here, we describe a case of severe skull base osteomyelitis caused by *Pseudomonas aeruginosa* with progressive palsy of cranial nerves that was successfully managed with prolonged outpatient continuous infusion of ceftazidime plus oral ciprofloxacin. A 69-year-old man presented with dysphagia, headache and weight loss. He complained of left earache and purulent otorrhea. Over the following weeks, he developed progressive palsy of IX, X, VI and XII cranial nerves and papilledema. A petrous-bone computed tomography showed a mass in the left jugular foramen with a strong lytic component that expanded to the cavum. A biopsy was then performed and microbiological cultures grew *Pseudomonas aeruginosa*. After six weeks of parenteral antibiotic treatment, the patient was discharged and treatment was continued with a domiciliary continuous infusion of a beta-lactam through a peripherally inserted central catheter, along with an oral fluoroquinolone for 10 months. Both radiological and clinical responses were excellent. Skull base osteomyelitis is a life-threatening condition; clinical suspicion and correct microbiological identification are key to achieve an accurate and timely diagnosis. Due to the poor outcome of *Pseudomonas aeruginosa* skull base osteomyelitis, prolonged outpatient parenteral antibiotic therapy administered by continuous infusion could be a valuable option for these patients.

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