COSTS AND OUTCOMES OF NOSOCOMIAL PNEUMONIA IN A SAMPLE OF BELGIAN HOSPITALS

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OBJECTIVES: Nosocomial pneumonia (NP) is a costly and life-threatening complication of hospitalized patients. This study assesses the outcomes and costs associated with NP, specifically those with mechanical ventilation (MV) from the Belgian hospital perspective.

METHODS: Data from the Belgian minimum basic data set from the first half of 2004 was used for this study. Patients from 37 hospitals with an ICD-9-CM code of bacterial pneumonia (481.xx–482.xx) and at least one IV antibiotic administration during their hospital stay were extracted. To isolate cases of pneumonia that were likely to be nosocomial, those with a secondary diagnosis of pneumonia and planned (versus emergency) admissions were retained. Outcomes for patients categorized on the basis of ICU stay and use of MV were assessed. Costs from the Belgian payer perspective were applied to resources utilized.

RESULTS: The final analytical sample contained 441 admissions; 115 (26%) with an ICU stay and MV (ICU+MV), 47 (11%) with an ICU stay without MV (ICU Non-MV) and 279 (63%) without ICU or MV (Non-ICU Non-MV). Approximately 74% were at least 65 years and 66% were males. Median length of hospital stay for the ICU+MV, ICU Non-MV and Non-ICU Non-MV groups were 32, 30, and 16 days. Total median hospital costs were €22,240, €14,565, and €14,793 for ICU+MV, ICU Non-MV and Non-ICU Non-MV respectively. Antibiotics formed a small part of the total cost: €972, €671, and €453 for ICU+MV, ICU Non-MV and Non-ICU Non-MV respectively. The ICU+MV group had the highest mortality (40%) compared to ICU Non-MV (26%) and Non-ICU Non-MV (24%).

CONCLUSIONS: NP is a costly complication, with high mortality risks, specifically for patients with MV. This difference may be in part attributable to underlying pathogen differences, patient and pneumonia severity, or the appropriateness of anti-infective treatment choice. Further investigation is warranted to investigate the influence of these factors.

TREATMENT PATTERNS AND OUTCOMES ASSOCIATED WITH MULTIDRUG RESISTANT STAPHYLOCOCCUS AUREUS INFECTIONS (MRSA) IN CANADIAN TEACHING HOSPITALS: INTERIM ANALYSIS

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OBJECTIVES: To summarize treatment management and clinical outcomes patterns in patients with multi-drug-resistant Staphylococcus aureus infections (MRSA), from the experiences of selected Canadian infectious diseases specialists. METHODS: A panel of specialists from Canadian teaching hospitals was surveyed to collect data on physician demographics and their typical management of MRSA infected patients. Descriptive statistics were calculated.

RESULTS: At the interim point, eleven of 31 physicians (35%) had participated. All physicians reported having access (full or restricted) to antibiotics with activity against MRSA regardless of formulary status. Of those agents, vancomycin was listed on all hospital formularies, followed by linezolid (91%) and quinupristin-dalfopristin (27%). On average, 156 (SD = 147) MRSA patients were admitted annually to their units, with 56% (SD = 23%) reported as nosocomial infections. The most commonly reported sites of infection were skin/soft tissue (31%, SD = 10%), and bacteremia/septicemia (29%, SD = 12%). According to 91% of the physician panel, patients received treatment if MRSA was suspected in 37% of cases and the remainder when confirmed. Vancomycin was the most commonly used first line treatment (100%). Linezolid was most often used as second line treatment (50%). On average, 81% (SD = 16%) of patients with MRSA were treated with monotherapy. Most common combinations were vancomycin+rifampin and vancomycin+cefproloxacin. On average, 52% (SD = 22%) of patients with nosocomial infections had their infections resolved while in hospital. MRSA infections were resolved in an average of 16.6 (SD = 6.0) days from diagnosis and the average length of stay in hospital was 14.6 (SD = 4.0) days. When MRSA infections were not resolved in hospital, the attributable mortality rate was 16%.

CONCLUSIONS: Although physicians typically have access to treatments for MRSA, high mortality and prolonged length of stay were observed. Further research is warranted to determine if clinical considerations for empiric treatment may improve patient outcomes.

COST-Benefit ANALYSIS OF VACCINATION PROGRAMME AGAINST POLIOMYELITIS IN MALAYSIA: ORAL POLIO VACCINE (OPV) VS INACTIVATED POLIO VACCINE (IPV)

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OBJECTIVES: To conduct a cost-benefit analysis of switching from the current regime using combination of DTwCPHiB + OPV to new combined vaccine DTacPHib + IPV (Stand alone) and DTacPHibIPV (Pentavalent combination). METHODS: Incremental cost-benefit approach was used in the methodology. Cost of the vaccination programmes includes price of vaccines, cost of vaccine wastage, cost of transportation and maintenance of cold chain, cost of vaccines administration and cost of managing adverse events. The benefits measured in this study are cost of avoiding Vaccine Associated Paralytic Polio (VAPP) and other adverse events such as mild fever, high fever and convulsions. A time-motion survey was conducted in one government health centre to obtain the human resource cost of vaccine administration. Cost of VAPP was estimated from an expert group discussion while the cost of other adverse events (high fever and mild fever) was obtained from interviews with 400 mothers and children attending three government clinics.

RESULTS: The current program at the cost of RM 32.83 per dose of DTwCPHiB + OPV vaccine would cost the country of RM 60.43 million annually. At RM 46.40 per dose of DTacPHib + IPV (Stand alone), the total cost of program would incur RM85.42 million and at RM 40.19 per dose of the DTacPHibIPV (Pentavalent combination), the total cost of program was RM73.99 million. Incremental cost-benefit ratio when switching from current programme to DTacPHib + IPV is only 0.0012. However, switching from current programme to DTacPHibIPV will lead benefit to outweigh cost by 15 times. Sensitivity analysis done showed that the cost-benefit ratio ranges between 8.2 and 9.7 for the best and worst case scenario respectively.

CONCLUSIONS: Switching from the current programme to DTacPHib IPV (Pentavalent combination) is highly cost-beneficial and should be the preferred option in the strategy to change from OPV to IPV in vaccination programme against poliomyelitis.