Abstract

Background: Therapeutic drug monitoring (TDM) makes use of serum drug concentrations as an adjunct to decision-making. Preliminary data in our hospital showed that approximately one-fifth of all drugs monitored by TDM service were gentamicin. Objective: In this study, we evaluated the costs associated with providing the service in patients with bronchopneumonia and treated with gentamicin. Methods: We retrospectively collected data from medical records of patients admitted to the Hospital Universiti Sains Malaysia over a 5-year period. These patients were diagnosed with bronchopneumonia and were on gentamicin as part of their treatment. Five hospitalisation costs were calculated; (i) cost of laboratory and clinical investigations, (ii) cost associated with each gentamicin dose, (iii) fixed and operating costs of TDM service, (iv) cost of providing medical care, and (v) cost of hospital stay during gentamicin treatment. Results: There were 1920 patients admitted with bronchopneumonia of which 67 (3.5%) had TDM service for gentamicin. Seventy-three percent (49/67) patients were eligible for final analysis. The duration of gentamicin therapy ranged from 3 to 15 days. The cost of providing one gentamicin assay was MYR25, and the average cost of TDM service for each patient was MYR104. The average total hospitalisation cost during gentamicin treatment for each patient was MYR442 (1EUR approx. MYR4.02). Conclusion: Based on the hospital perspective, in patients with bronchopneumonia and treated with gentamicin, the provision of TDM service contributes to less than 25% of the total cost of hospitalization.

Keywords
Drug Monitoring; Costs and Cost Analysis; Pharmacy Service, Hospital; Gentamicins; Bronchopneumonia; Malaysia.