

Costs associated with a strict national policy for controlling the spread of highly resistant microorganisms

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Introduction

French national recommendations to control spread of highly drug-resistant organism (HDRO) are based on a strict “search and isolate” strategy that induces financial burden. We aimed to investigate the financial consequences of this policy.

Methods

We reviewed data from a 2-year prospective surveillance (01/2012 to 12/2013), of HDRO in three university hospitals in Northern Paris. Episodes were defined as single cases or outbreaks of glycopeptide-resistant enterococci (GRE) or carbapenemase-producing enterobacteriaceae (CPE) colonisation. Costs included loss of income due to suspension of new admissions; and costs of screening cultures, staff reinforcement and contact precautions. Univariate analysis, simple and multiple linear regression analysis were conducted with the overall costs as the dependent variable.

Results

Overall, 41 episodes occurred during the surveillance, totalizing 113 colonised patients (19 GRE, 20 CPE and 2 both); 28 episodes were single cases and 13 were outbreaks, with either one secondary case (n=6) or > 1 (n= 7) secondary cases (with a total of 66 secondary cases, ranging from 2 to 29). The overall mean cost (k€, mean ± SD) per case was measured at 4.4 ± 11.5 and 11.4 ± 15.7 for a single case identified within and after 48 h after admission, respectively (p<0.01). In outbreak situation, the total cost varied from 14.8 ± 17.7 for an episode with one secondary case (7.7 ± 8.8 per case) to 136 ± 151 (12.8 ± 5.1 per case) for outbreaks with at least two secondary cases. In episodes with single cases, contact precautions and screening culture represented 51 and 30% of overall costs, respectively. In outbreak situations, the loss of income due to suspension of new admissions represented 77 to 94% of overall costs, the highest financial item of infection control strategies (R² = 0.98, p<0.01). Overall, these costs were the highest costs category.

Conclusion

This study suggests that early detection and implementation of contact precautions could lead to major cost savings in a context of a strict HDRO policy. In outbreak situation, increasing staff, rather than stopping patient admission, is probably the most cost-effective strategy to control spread of HDRO.