

Over-the-counter Medication Sales Surveillance for Early Detection of Respiratory Epidemics in Rural China

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Objective

To explore the feasibility of using OTC medication sales data for early detection of respiratory epidemics in rural China

Introduction

Respiratory infectious diseases are the most common diseases reported in rural China. Studies have suggested that the OTC retail sale data could be used to detect early outbreak (1, 2). However, few researches have performed to identify whether OTC retail sales data could also predict the outbreak in developing countries and resource poor settings. Here, we conducted a web-based syndromic surveillance system with OTC retail sales to detect respiratory epidemics in rural area in China.

Methods

80 kinds of drugs for respiratory infectious diseases have been selected including 12 antibiotics, 5 antipyretics, 30 compound cold medicine, and 33 cough suppressants. From Apr. 1st to Sep. 30th 2012, sales data were collected from 23 pharmacies in two rural counties in Hubei Province, central China, by the web-based surveillance system. Data of all respiratory infectious cases were obtained by the China Information System for Diseases Control and Prevention (CISDCP) in same region and during the same period. The-day-of-the-week effect was adjusted and then time series of adjusted data were compared to explore the correlation.

Results

Compound cold medicines combined with different ingredients including antipyretics, vitamins and Chinese herbal medicine accounted for nearly 50% of total sales volume, while cough suppressants and antibiotics accounted for nearly 25% separately. The adjusted data were capable of fitting the original data. Time trend of different categories were similar to each other. However, no correlation was found between sales data and number of respiratory infectious cases (Figure 1).

Conclusions

The results did not support the surveillance of OTC medicines sales could detect epidemics of respiratory infectious disease. However, it was tentative due to multiple factors like no sizable outbreaks during the period and short term data for analysis might influence this outcome. More studies are needed to further investigate the feasibility of using OTC medication sales data for the early outbreak detection.

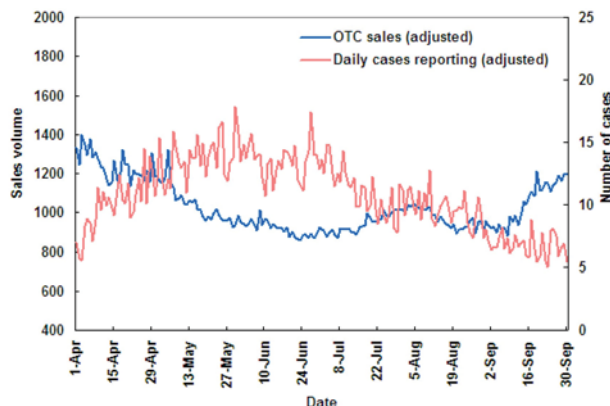


Figure 1 Comparison of OTC medicines sales (adjusted) with number of respiratory infectious cases reported in the CISDCP system, by date, April to September, 2012

Keywords

Medication sales; Respiratory epidemics; Surveillance

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