

Adverse drug reaction-related hospitalizations of adults in the Lao People's Democratic Republic: health risks of unknown medicines

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Background

Although important to take preventive measures towards drug-related morbidity reduction, drug safety research is impaired by the lack of knowledge of medicines used by patients. The danger of medicines of unknown identity (MUIs) (not sold in their original packaging and without written identity) has been suspected in previous studies in low- and middle-income countries of South-East Asia. Using visual and analytical tools to identify MUIs, we designed a cross-sectional study to evaluate the incidence of and factors associated to adverse drug reaction (ADR)-related hospitalizations in adults in a Laotian central hospital in Vientiane Capital.

Methods

All unplanned admissions (≥ 24 h) in Mahosot hospital except for acute trauma were prospectively recorded during 7 weeks in 2013, corresponding to 453 patients included. MUIs suspected to be involved in ADR(s) were identified through comparison of visual characteristics of tablets/capsules to that of reference medicines, and by nuclear magnetic resonance (NMR)/mass spectrometry (MS) analysis. Factors associated to ADR-related hospitalizations were identified by multivariate logistic regression.

Results

The incidence of hospitalization related to an ADR was 5.1% [(95% CI 3.1-7.1)] during the study period. Patients having used MUI(s) were more likely to be hospitalized because of an ADR [Adjusted Odds-ratio = 4.5 (95% CI 1.7-11.5)] than patients using medicines of known identity, irrespectively of the age and gender. Gastro-duodenal bleeding ulcers were the most common ADRs ($n=9$), almost half related to MUI(s). MUI(s) were more often procured in private clinics than medicines of known identity (48.4% vs 9.0%, $p<0.001$).

Discussion

Using MUI(s) increases the risk of developing ADR-related hospitalizations. In serious cases of ADRs leading to hospitalization, the absence of knowledge of medicines used by patients impairs patients' care, especially for forthcoming prescription of medicines. This study highlights the need to ensure appropriate labeling of medicines at dispensing and also to provide tools to identify MUIs in clinical settings.

Keywords : adverse drug reaction, hospitalization, medicine of unknown identity