THE EFFECT OF A CLINICAL PHARMACIST-LED TRAINING PROGRAMME ON INTRA VENOUS PREPARATION AND ADMINISTRATION ERRORS IN A VIETNAMESE HOSPITAL

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Background Medication safety has been a concern for decades worldwide, but there is still relatively little research about interventions to reduce medicines administration errors in hospitals, especially in resource-restricted settings such as Vietnam. Our large study on the frequency and type of medication errors in Vietnamese hospitals indicated that the highest risk was associated with intravenous medication administration [1].

Purpose To investigate the effect of intensive training on the frequency of intravenous medicines preparation and administration errors in an urban public hospital in Vietnam.

Materials and Methods This was a controlled intervention study with pre- and post-intervention measurements using a direct observation method, carried out in two critical care units: Intensive Care Unit (ICU – intervention ward), and Post-Surgical Unit (PSU – control ward). The intervention consisted of lectures plus practical ward-based teaching sessions, carried out by a clinical pharmacist and a nurse. In each ward, all intravenous doses prepared and administered by nurses were observed 12 hours per day, on 7 consecutive days, each period.

Results A total of 1294 doses were observed, 718 in ICU and 576 in PSU. Error rate on the intervention ward (ICU) decreased from 62.7% to 52.5% (P = 0.01); preparation errors including wrong dose, deteriorated drug, wrong technique of preparation decreased significantly (p < 0.05). On the control ward (PSU) there was no significant change in error rates (73.8% vs. 73.1%, p = 0.85). Almost all preparation error types were similar in both periods (p > 0.05), except for technique errors, which was increased from 15.5% to 25.9% (p < 0.05).

Conclusions Intensive training showed a slight improvement in overall and specific error rates, particularly preparation errors. Further measures are needed to improve patient safety.

Reference
1. EAHF, abstract titled: "Errors in medication preparation and administration in Vietnamese hospitals", by H.T. Nguyen et al.

No conflict of interest.

THE IMPACT OF PHARMACEUTICAL INTERVENTIONS ON THE TREATMENT OF GRAM POSITIVE INFECTIONS

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Background Inappropriate use of antibiotics results in increased antibiotic resistance and poor efficiency, which should be avoided through pharmaceutical interventions.

Purpose To evaluate the impact of pharmaceutical interventions (PIs) on the effectiveness, safety and efficiency of treatment of Gram-positive infections in adult in-patients.

Materials and Methods For 4 months, all episodes of hospitalisation (on the same Gram positive antibiotic treatment) were evaluated of adult in-patients who were on vancomycin, linezolid or daptomycin for ≥24 hours, except for the indication of prophylaxis.

Results Several patients treated with vancomycin, linezolid or daptomycin were treated with significant errors such as the lack of observation of the half-life or the wrong dose. In this study, 76% patients were on medical HU; the infection originated in the community (85%); Diagnosis: bacteraemia (23%), skin and soft tissues infection (21%), pneumonia (20%). Median duration of hospital stay: 16 days (IQR: 9–27); of antibiotic treatment: 7 days (IQR: 7–11).

Conclusions Intensive pharmaceutical interventions in patients with Gram-positive infections increase treatment efficiency and pursue improvement of the effectiveness and safety throughout the antibiotic treatment, reflecting the need for continued treatment follow-up to adapt it to the patient’s clinical course.

No conflict of interest.

THE PHARMACIST’S ROLE IN EMERGENCY FIRST AID SERVICES IN A TERRORIST ATTACK WITH SARIN: EMERGENCY INTERVENTION SIMULATION

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Background After 11 September 2011, Italy prepared a Public Health Plan for national defence and regional storage facilities for antidotes. These are managed by a physician and a pharmacist. In Friuli Venezia Giulia-Italy, the pharmacist is responsible for the safety of the antidotes, the national database, collaborates with the physician in planning for emergencies and makes antidotes available for immediate transfer to the site of the incident. Sarin, a nerve gas, even at a very low concentration, causes death rapidly if the victim isn’t treated immediately with atropine and subsequently within the first 4-5 hours with pralidoxime.

Purpose To verify, by means of a simulation, that there were sufficient stocks of atropine, and the accessibility, distribution and the appropriateness of the treatment.

Materials and Methods We simulated a terrorist attack with sarin at the railway station in Udine, the seriousness equivalent to the attack in Tokyo on 20 March 1995.

Results In Tokyo, 107 people out of approximately 6000 involved in the attack with sarin, needed treatment with atropine. 80% were treated with only 2 mg, for a total of 170 mg, while 21 needed more...
Background Electronic prescribing (EP) systems have been recognised as successful in reducing chemotherapy prescribing errors. However, electronic prescriptions are unlikely to prevent all errors, and new types of errors may emerge.

Purpose To assess prescribing error rates and identify new error types and their causes with the implementation of an electronic prescribing system for ambulatory cancer patients at a London Cancer Centre.

Materials and Methods A service evaluation was conducted in two parts, covering two different strategies for interception of prescribing errors – prospectively by pharmacists during a 2-week period, and retrospectively using data from the pharmacy EP telephone helpline service, over 41 weeks.

Results The overall rate of error-containing prescriptions was estimated to be 6%.

In the prospective part, 32 errors were identified from 571 electronic chemotherapy prescriptions. Most commonly committed errors were chemotherapy drug dose adjustments (13; 41%) and weight omissions (11; 34%).

In the retrospective analysis, 95 of 141 errors (67%) were ‘selection errors’, classified mainly as ‘work-arounds’ (26; 18%), ‘wrong commands’ (35; 25%), or ‘wrong fields’ (27; 19%). 65 errors (45%) were related to scheduling a chemotherapy or supportive drug or regimen.

Electronic system-related causes of prescribing errors were recognised in 4 of 32 cases (13%) in the prospective part, and in 89 of 141 cases (63%) in the retrospective part. It was estimated that with implementation of technical solutions and additional prescriber training, 58% of these errors could be prevented in the future.

Conclusions The estimated rate of chemotherapy prescribing errors was 6%. A number of different errors, specific for electronic prescribing, were identified, with a thorough explanation of how various errors may have occurred. Future larger scale studies are needed to confirm prescribing error rates, and to possibly identify other, previously unrecognised, types of chemotherapy prescribing errors.

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