

GRP-183 THE EFFECT OF A CLINICAL PHARMACIST-LED TRAINING PROGRAMME ON INTRAVENOUS 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. EAHP abstract titled: "Errors in medication preparation and administration in Vietnamese hospitals", by H.T. Nguyen *et al*,

No conflict of interest.

GRP-184 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.

Variables related to: 1) Patient [sex, age, penicillin allergy or intolerance, hospitalisation unit (HU) and type of setting-acquired infection, diagnosis, length of stay], 2) treatment duration, drug and observance of the criteria of use established by the drug therapeutics committee (DTC), considering treatment of choice (vancomycin) and alternative treatments (linezolid and daptomycin), and 3) PIs: number, type (effectiveness, safety or efficiency), pharmacotherapeutic medication process, drug, type of PI (discontinuation of medicine, suggested therapeutic alternative, initiation of the medicine, dose individualization (DI), therapeutic/clinical drug monitoring (TCDM) and acceptance of the PI.

SPSS v. 17.0 was used.

Results 148 patients [(59% male; mean age 67 years (95% CI: 63–68) and penicillin allergy/intolerance: 10%] received 174 treatments. 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: 3–11).

Most prescribed antibiotic: vancomycin (68%) [linezolid (28%), daptomycin (3%)]. 74% (128) of treatments fulfilled criteria established by the DTC; linezolid and vancomycin didn't fulfil the criteria in 35/49 (71%) and 9/118 (8%) prescriptions.

251 PIs were made, 96 (38%) during initial prescription validation, representing 1 PI/treatment (IQR: 1–2) and generating 79% acceptance. Type of intervention: safety 44% (93% in vancomycin), effectiveness 24% (94% in vancomycin) and efficiency 32% (83% in linezolid). After the PI, 84% (146) treatments met DTC criteria, the percentage of non-conforming linezolid decreasing to 23/49 (47%). 155 PIs (IQR: 1–3) were performed during follow-up, with 2PIs/treatment and an 87% acceptance; these were mainly DI (48%) and TCDM (42%) interventions.

Conclusions 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.

GRP-185 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