INTRODUCTION

Paraquat ingestion is a leading cause of fatal poisoning in many parts of Asia, especially in Vietnam, and almost all patients were suicidal by nature. There are widely accepted guidelines on treatment of patients with paraquat self-poisoning and the treatment varies from supportive care alone to various combinations... Estimates of the distribution of paraquat > 40 mg/L and urine paraquat concentration (UPC) > 1 µg/mL were closely correlated with high mortality [1, 6].

Recently, early hemoperfusion (HP) showed improvement of survival for severely parquat-poisoned patients [5, 15]. The aim of this study was to compare the effectiveness of activated charcoal hemoperfusion (ACH) and HP with hemoperfusion (RH) on clinical outcomes of acute paraquat poisoning.

OBJECTS AND METHODS

This was a retrospective observational controlled study. 62 cases of acute paraquat poisoning who were admitted to Poison Control Center (PCC), Binhai Mai hospital from 12/2012 to 07/2013 treated by standard treatment (all received similar pulse therapy, hemoperfusion, cyclophosphamide and other detoxification methods including gastric lavage, activated charcoal and other supportive treatments) in combination with hemoperfusion. Criteria for hemoperfusion were suicidal patients with paraquat ingestion and positive with paraquat in the urine. Indications for activated charcoal hemoperfusion was urine paraquat test negative. Contrast hemoperfusion was: severe respiratory failure.

Patients were categorized into 2 groups. Group 1 (Charcoal) group included 47 patients who were treated with activated charcoal HP (when there was no filter resist at the time). Group 2 (Resin) group included 28 patients who were treated with resin HP with hemoperfusion.

STUDY FACILITIES AND DATA ANALYSIS

Facilities Medical Care 4008S renal dialysis machine with one time used hemoperfusion cartridge (HA20 resin hemoperfusion cartridge – Zhuhai Befan Biomedical), Resired L13 filter was connected after HA203 cartridge. Blood flow rate was 180 - 200 mL/min. The anticoagulant used was enoxaparin. Prinamixel Adzhubia K1050 (Acontracel machine) with activated charcoal were used. Blood flow rate was 150-200 mL/min. The anticoagulant used was heparin.

Urinary paraquat concentration was estimated by comparative optical analysis method. Data analysis

Fischer Exact test was done for ratio comparison. Mann Whitney test and Sign test were done for comparison of percentage and continuous variables. P<0.05 was considered as significant.

Table 1. Characteristics of Patients

Table 2. CHEMOTHERAPY & ITS EFFECTS

Table 3. OUTCOME & SIDE EFFECT

RESULTS

The results showed one course of RH and ACH method had the same effect in decrement of UPC, but the outcome mortality on 2 months of treatment seemed to be better in RH group, this might be due to much more RH procedure than ACH during treatment effectiveness of RH method in renal support function; RH could be compared to ACH method in term of patient’s life (Table 4) show RH method was that had lowest mortality.

DISCUSSION

Advantages of RH compared to the other methods were: (1) RH was performed in hospital and control at medical staff, (2) RH can be performed in almost all local hospitals, (3) RH can be controlled by medical staff in hospital, (4) RH can be performed more easily and rapidly for severe poisoning of any acute paraquat poisoning patients. One course of RH clearly had fewer fall in mortality. HP + ACH method was more lower.

CONCLUSIONS & RECOMMENDATIONS

Initial results of the study showed more times of RH had significantly a lower mortality rate than ACH method and a lower paraquat poisoning with fewer side effects in comparison with ACH method. RH hemoperfusion with hemoperfusion should be soon carried out for acute paraquat poisoning patient (even in local hospital), in this study, advantages and feasibilities in order to increase its effectiveness by continuously performing every procedure of treatment.

LIMITATIONS & REFERENCES

This was a retrospective study, and just the first HP between two groups was compared, therefore, this bias could not be avoided.

Blood paraquat concentration was not measured before and after HP, resin paraquat concentration was just estimated by comparative optical analysis method.