A Case of Aluminium Phosphide Poisoning

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Background: Aluminium phosphide (AlP), also known as rice tablet, is a pesticide used to protect stored grains. Aluminium phosphide reacts with moisture in the atmosphere to produce phosphine gas which is active as a pesticide. Around 500 mg of AlP is lethal dose and mortality is reported between 30% and 100%. The major cause of death is cardiopulmonary collapse due to ARDS or arrhythmia. Although AlP poisoning by ingestion or inhalation is one of the common causes of poisoning around the world, in Korea, only one case of indirect inhalation of phosphine released during fumigation was reported, but direct ingestion of a tablet has not yet been reported.

Case presentation: A 50-year-old man visited emergency department complaining of vomiting after ingestion of a 3-gm-rice tablet for suicidal attempt 4 hours before the visit. The patient was alert and vital signs were 128/68-120-22-36.5°C and O2 saturation 98%. The initial ECG revealed sinus tachycardia and peaked T waves in leads V3-V5, but returned to normal rhythm spontaneously in an hour. Laboratory study did not show any notable results with ABGA revealing normal pH. SAPS II was 17. Gastric lavage and charcoal apply was performed, followed by intravenous administration of magnesium sulfate and N-acetylcysteine. Echocardiography and holter monitor performed to evaluate delayed cardiac toxicity revealed no abnormalities. During the 5 days of hospital stay, he didn’t complain of dyspnea, difficulty with swallowing or peripheral neuropathy.

Discussion: High mortality rate of AlP poisoning has been reported but there is no effective antidote to reverse the disease course. Early decontamination including gastric lavage and induced vomiting is important for improved survival. Administration of magnesium sulfate and N-acetylcysteine can be tried but efficacy is yet to be studied. Close monitoring during early stage followed by evaluation of sequela is important.

Patient Safety: An Analysis of Patient/Specimen Identification Errors

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Background: Patient Identification and specimen labeling represent one of the most critical area in patient safety and is an increasingly visible mission for clinical laboratories. The aim of this work is to assess patient identification and specimen labeling improvement after implementation projects using longitudinal statistical tools.

Methods: Patient/Specimen Identification errors were categorized by a multidisciplinary healthcare team. They were grouped into 3 categories: A: specimen/requisition mismatch, B: unlabeled Patient Identifications, C: Misidentification Patient. These types of identification errors were compared preimplementation and postimplementation for 3 patient safety projects: 1) Development of Identification Patient and Specimen Process to follow by all the professionals involved: (2) reorganization of phlebotomy ; (3) introduction of an electronic event reporting system. We use trend analysis and Student t Test

Results: Of 46632 total requests analyzed, requisition mismatches, unlabeled patient Identification and misidentification patient ; represented 1.6/10,000, 5.8/10,000, and 4.1/10,000 of errors, respectively. Student t test showed a significant decrease in the two most serious errors, mislabeled specimens (P < .001) and Missidentification Patient (p< .001) when compared to before implementation. Trend analysis demonstrated decreases in all 3 error types for 18 months. Conclusions: The applied strategies have demonstrated to be effective in the improvement of the identification of the patient in the analytical requests. However, we must continue working in this strategy, with all the implied professionals and trying to reach the objective of which the 100% of the requests they are identified correctly.

The Role of General Physician is Very Important in Chronic Phase of Disaster Medical Assistance

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Background: In super acute phase after the Great East Japan Earthquake (11 March 2011), Disaster medical association team (DMAT) consisted of emergency physicians acted in disaster areas in the East Coast of Japan. On the other hand, these areas needed chronic care support by general physicians because of the enormous destruction of the medical facilities by the tsunami. So then, the Japanese Red Cross Society had sent disaster emergency outpatient assistance doctors to Ishinomaki Red Cross Hospital, just because it was moved away from the Pacific Ocean three years ago.

Methods: Determination of specialization by direct hearing and information from home page of each Red Cross Hospitals.

Results: Cumulative 81 medical doctors were 38 internal medicine physicians, trainees 15, emergency physicians 12, surgeon 6, pediatrician 3, orthopedic surgeon 3, anesthesiologist 2, obstetrician 2, from April to August 2011. At first 6 dispatched doctors were resident and did emergency outpatient work in Ishinomaki Red Cross Hospital for 6 days and dispatched. A lot of Cases of pneumonia and bronchial asthma due to debris and rubble by Tsunami were seen. All dispatch doctors corresponded to primary surgery including fractures and trauma, pediatric diseases, and posttraumatic stress disorder due to earthquake itself, tsunami damage, and radiation problem of Fukushima.

Conclusions: The role of general physicians is very important in chronic phase of disaster medical assistance. Medical facilities in the area with many earthquakes should be moved apart from the sea in order to avoid the damage of tsunami.

Factors Predicting Outcome of Patients with Organophosphorus Poisoning

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Background: Around two million people dies each year from Organophosphorus pesticide poisoning, principally by self poisoning in Asia-Pacific region. Predictors of the factors associated with outcome of patients with Organophosphorus poisoning using various parameter can augment appropriate management tool.

Methods: This cross-sectional observational study was carried out from September, 2012 to June, 2013 in the department of Medicine, DMCH. Eighty samples with detailed information were obtained in each cases according to protocol from patients or accompanying attendants. Thorough clinical examination was done. International program on chemical safety poison severity score (IPCS-PSS) and Glasgow coma scale (GCS) score was recorded to predict the outcome. Collected data were classified, edited and entered into the computer for statistical analysis by using SPSS version-16 (Inc. Chicago-II) and area under curve (AUC) was observed.

Results: Among 80 cases, majority (42.5%)of the patients with Organophosphorus compound were in 3rd decade and male to female ratio was 1.4:1. Regarding nature of various OPCs, Malathion was found 20.0%, diazinon 16.25%, Chlorpyrifos 7.5%, unlabelled OP 17.5% and other OP was 26.25%. GCS and IPCS PSS are good predictor of outcome and area under curve (AUC) found 0.407 with sensitivity and specificity both of 0.571 and 0.242. The IPCS PSS grade 1 presentation was more frequent which was 71.2%, followed by grade 3 (IPCS PSS) 15.0% and grade 2 was 13.8%. In grade 1 and 2 (IPCS PSS) 71.3% and 13.8% were cured respectively and there was no death. Grade 3 (IPCS PSS) 12.5% were cured and 2.5% were found death.

Conclusions: The present study indicated that the IPCS PSS and GCS were found good predictor for mortality. Patients who present with GCS < 13 and IPCS PSS grade 2 and 3 need to be treated accordingly and monitored very closely.