Poster Abstracts

PO-03

EFFECTS OF PARAQUAT BAN ON HERBICIDE POISONING-RELATED MORTALITY AUTHORS

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Objectives: Paraquat is a life-threatening poison. In Korea, paraquat-containing herbicide product registration was canceled in November 2011 while sales were completely banned from November 2012. To evaluate the paraquat ban effect on the herbicide-induced poisoning epidemiology and mortality.

Methods: This retrospective study analyzed patients with herbicide poisoning at 18 Emergency Departments in South Korea between January 2010 and December 2014. The overall and paraquat mortality rates were compared pre- and post-ban. The herbicide mortality-associated factors were evaluated using logistic analysis. To determine if there were any changes in the mortality rates before and after the paraquat sales ban, and to determine the time point of any such significant changes in mortality, the R version 3.0.3 (package, bcp) was used to perform a Bayesian change point analysis

Results: A total of 2257 patients were selected as study subjects and consisted of higher number of males (n=2053, 90.9%). Paraquat poisoning comprised 46.8%. The overall and paraquat poisoning mortality rates were 40.6% and 73.0%, respectively. The decreased paraquat poisoning mortality rate (before 75% vs after 67%, p = 0.041) might be associated with increased intentionality. The multivariable analysis revealed the paraquat ban was one independent predictor that decreased the herbicide poisoning mortality (p = 0.035). In Bayesian change point analysis, the herbicide mortality rate change mainly increased twice, approximately 3 months and 1 year after the paraquat ban enforcement and complete sales ban, respectively.

Conclusion: This study suggests that the paraquat ban decreased intentional herbicide ingestion and contributed to lowering herbicide poisoning-associated mortality. The change point analysis suggests a certain timeframe was required for the manifestation of regulatory measures outcomes.