

## **Influence of gastric decontamination on patient outcome after paraquat ingestion.**

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**Objective:** To study the possible impact of administration of adsorbents and/or gastric lavage on survival in a cohort of patients with paraquat ingestion. **Methods:** Cases from a survey of paraquat poisoning presenting to nine base and general/teaching hospitals across Sri Lanka over a 26 month period were analysed. A standardised questionnaire was used to collect details of the circumstances of ingestion, treatment and outcome. Analyses were performed using non-parametric methods (Kaplan-Meier and log rank trend tests) and semi-parametric (Cox's proportional hazards with adjustment for potential confounding factors) methods. **Results:** Data from 586 patients were included in the analysis. Most patients (84.5%) were given Fuller's Earth or activated charcoal. Adsorbent treatment did not significantly affect survival in the model, nor was there evidence of an interaction with the formulation type. Gastric lavage was given to 61.9% of patients. Patients who had ingested < 30 ml and did not survive died earlier if they received lavage ( $\chi^2 = 8.7$ ,  $p=0.003$ ), whereas lavage had no significant influence on time to death for those ingesting > 30 ml ( $\chi^2 = 0.4$ ,  $p=0.51$ ). When analysing for the influence of lavage on survival using Cox regression models, the hazard ratio (HR) for patients receiving lavage was 1.47 (95%CI 0.96-2.25), but in the subgroup of patients who had ingested >30ml and received lavage there was an additional multiplicative effect (HR=0.55; 95% CI 0.32-0.93), resulting in a small net beneficial effect of lavage in the higher ingestion group (HR=0.81). When including time to admission to a primary or study hospital in the analysis, there was no evidence of any effect of lavage for patients ingesting either low or high volumes if they were admitted later than an hour. In contrast, the association of lavage with poor outcome was more pronounced in patients who were admitted within one hour (HR=2.53; 95% CI 1.01-6.36) and so was the interaction effect in the subgroup of patients who had ingested > 30 ml (HR=0.23; 95% CI 0.07-0.76) showing an overall protective effect of lavage in the high ingestion group (HR=0.58). However, this had only a small effect on the very low survival rate in this group. **Conclusion:** Given the small number of patients receiving no adsorbent treatment, no firm conclusions can be drawn regarding its possible efficacy. Our data suggest that in this cohort of patients gastric lavage may have contributed to a poorer outcome for patients who ingested < 30 ml, whereas it may have had a small beneficial effect in patients who ingested higher volumes, in particular in those admitted to hospital within one hour of ingestion.