

## Predictors of Successful Extubation and Ventilatory Outcome in Organophosphate Poisoning

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**Objective:** To find out clinical predictors of successful extubation following mechanical ventilation after organophosphate (OP) poisoning. **Methods:** We prospectively observed neck muscle power before extubation, requirement of atropine within 24 hours prior to extubation, oropharyngeal suction frequency within 4 hours after extubation, Peak Expiratory Flow rate (PEFR) within 12 hours after extubation, presence of lung infection and rates of re-intubation within 72 hours of extubation. The investigators were not involved in decision making on extubation. **Results:** Forty-three patients (32 males, 11 females; age range 13–77 years) were ventilated following OP at Toxicology Unit, Teaching Hospital, Peradeniya, during the study period of 12 months. Re-intubation was observed in ten (23.3%), while eleven (25.6%) succumbed to the illness (Table 01). Lower rates of re-intubation was associated with neck muscle power of 4 or more (Medical Research Council scale; Odds Ratio 15.2, 95% Confidence Interval 2.4-95.0,  $p < 0.05$ ), non requirement of atropine within 24 hours prior to extubation (OR 7.3, 95% CI 1.3-41.0,  $p < 0.05$ ), non requirement of more than two oropharyngeal suction within 4 hours of extubation (OR 28, 95% CI 3.9-199,  $p < 0.05$ ), PEFR  $> 200$  L/min (OR 17, 95% CI 1.4-196,  $p < 0.05$ ) and absence of lung infection (OR 13.5, 95% CI 1.4-123,  $p < 0.05$ ). The day of onset of respiratory failure and the total dose of atropine required did not predict successful extubation with significance. **Conclusion:** Multiple clinical parameters can be used to guide successful extubation following OP induced respiratory failure.

Table 01: Outcome in organophosphate induced respiratory failure.

Type of Organophosphate	Number of admissions	Number ventilated	Number of re-intubations	Number of deaths
Chlorpyrifos	30	15	4	4
Dimethoate	22	7	0	2
Profenophos	8	3	2	1
Fenthion	3	3	0	0
Malathion	1	1	1	1
Diazinon	1	1	0	1
Other	9	4	2	0
Unidentified	20	9	1	2
Total	94	43	10	11

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