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High-dose N-acetylcysteine in dark urine dithionite patients: A pilot study

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Objective: To report the outcome of high-dose N-acetylcysteine treatment in potentially severe paraquat poisoning defined by purple to black colored urine dithionite result.

Methods: We performed a retrospective review of paraquat ingestion cases with purple to black urine dithionite result from Ramathibodi Poison Center Toxic Exposure Surveillance System, between December 2016 and March 2017.

Results: In total, 256 paraquat poisoning patients were consulted during the period of study, but only 53 patients had urine dithionite result. Nineteen patients had purple to black urine dithionite result, but 13 patients (68.42%) received N-acetylcysteine in dosage 150 mg/kg over 1 hours intravenously as a loading dose followed by 500 mg/kg/day continuous infusion until complete recovery or death. Urine dithionite test were mostly performed within 12 hours (15 patients, 78.94%), but exactly time the patients received N-acetylcysteine was not record in all cases. There were three patients survived (two received N-acetylcysteine). The mortality rate was not difference whether treatment with N-acetylcysteine or not (84.61% vs 83.33%, retrospectively). Most of the patients died within 24 hr (10 patients, 69.2%). Other treatments included cyclophosphamide, dexamethasone, vitamin C, and vitamin E were administered in all patients. None of them received hemodialysis or hemoperfusion. The median length of stay was longer in N-acetylcysteine group when compared with absent N-acetycysteine (3 vs 1 days, retrospectively). In 16 deaths, the median survival period of cases with N-acetylcysteine was 2 days (1-21). The median survival period of cases without N-acetylcysteine was 1 day (1-7).

Conclusions: N-acetylcysteine does not affect morality rate in severe paraquat poisoning defined by purple to black urine dithionite result. A larger prospective study may be required to establish the differentiation of outcome.