## P-12

# Treatment of paracetamol poisoning based on reported dose of ingestion- challenges of antidote choice and patient outcome in resource poor settings

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**Objective:** This study evaluated the choice of antidote and outcomes of treatment of paracetamol poisoning based on a reported dose of ingestion instead of plasma paracetamol level.

**Methods**: This is a prospective consecutive case series of acute paracetamol poisonings presenting between January 2013 and June 2017 to Toxicology unit, Teaching Hospital Peradeniya, Sri Lanka.

**Results:** There were 1543 patients (1026 females) with an acute paracetamol overdose. Median age was 22 years (IQR=17-24). 920 patients were untreated due to lower reported doses of ingestion. Of the treated 643, 185 (28.7%) were treated with methionine, 438 (68.1%) patients were treated with intravenous N-Acetylcysteine (NAC). Duration of hospital stay, time to admission and ingested dose was significantly higher in the patients treated with intravenous NAC ($p< 0.0001$) than methionine. Paracetamol level was measured in 452 patients (methionine = 86, NAC = 230, methionine and NAC = 3, no antidote = 133). The median plasma paracetamol was 91.5 (IQR= 28.75-188). One hundred and thirty five patients (42.3%) who were treated with an antidote based on the reported dose of ingestion were later found to have levels below the treatment line. Ninety-three (69%) of these patients were treated with NAC, while 39 (29%) were treated with methionine. Twelve patients (9%) who were not treated based on the reported dose of ingestion were later found to have levels above the Prescott treatment line. 123 number treated with NAC had levels above Prescott line and 103 were below the line. Twenty-one patients (11%) who were treated with methionine had levels above the Prescott treatment line, and presented after eight hours. Further, in those who had toxic levels and no treatment was given, serum glutamic pyruvic transaminase (SGPT) declined. There were no deaths or liver failure in these patients. Reported dose of ingestion has acceptable sensitivity and negative predictive value in identifying patients with a non-toxic plasma paracetamol levels but its specificity is poor indicating that it has led to over treatment in 15% of patients. Medical officers missed 7% of patients with a toxic level. Reported dose of ingestion had an area of 69% in predicting a toxic level in receiver operating characteristic curve.

**Conclusion:** Oral methionine is considered a treatment option in 30% of patients and is well tolerated. SGPT declined over time irrespective of treatment received. Reported dose of ingestion is a poor predictor of toxic plasma paracetamol concentration.