

SNAPTIMED: Does the Scottish and Newcastle Antiemetic Protocol achieve Timely Intervention & Management from the Emergency Department to Discharge for Paracetamol Poisoning?

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Introduction

Many hospitals are now using the modified 12-hour Scottish and Newcastle Antiemetic Protocol for acetylcysteine (NAC) in paracetamol poisoning. However, to our knowledge, the perceived benefit of decreased Length of Stay (LoS) is unproven.

This study aimed to establish whether the SNAP is associated with improvement in hospital length of stay, as well as validate the performance of the protocol for the prevention of anaphylactoid reactions and total infusion duration.

1167 records assessed for eligibility

873 records excluded

- 801 no evidence of NAC treatment
- 65 notes unavailable
- 7 notes unclear on protocol used

294 records analysed

- 76 SNAP
- 218 21hr

Results and discussion

294 patients were included in the analysis.

Use of the SNAP was associated with a statistically significant reduction in length of stay: -7.9hrs (95% CI -12.6hrs to -2hrs), and a reduced risk of anaphylactoid reaction (NNT = 10). There were no significant differences in the rate of hepatotoxicity or other adverse outcomes.

When extended infusions were accounted for, the mean time periods attributable to NAC treatment were 15.0hrs and 23.4hrs respectively.

Protocol	SNAP	21hr
NAC delivery	300mg/kg over 12 hours	300mg/kg over 21 hours
Criteria to cease treatment	INR 1.3 or less ALT normal Paracetamol <10mg/ml Asymptomatic for liver damage	INR 1.3 or less ALT normal (or less than 2 x upper limit of normal and not more than double admission value)

Table 1. The more stringent requirements for stopping NAC at 12hrs

Materials and methods

Retrospective chart review: 25/03/19 to 25/09/20.

Patients age 16+ with a diagnosis of paracetamol poisoning were included in the analysis if they received treatment with NAC and the protocol could be identified. Inter-rater reliability for data abstraction was assessed using Krippendorff's alpha.

	SNAP (n=76)	21hr (n=218)	21hr vs. SNAP p value
Age (years) (IQR)	30 (21–46) (n=76)	29 (21–46) (n=218)	0.99
Female (number)	69.7% (n=218)	67.9% (n=218)	0.77
Weight (kg)	73.0 (60–82.5) (n=69)	72.3 (61.5–91.5) (n=196)	0.35
Paracetamol dose ingested, (median mg/kg) (IQR)	241 (173–371) (n=67)	223 (133–326) (n=181)	0.09
Single acute overdose* as a proportion of patients requiring treatment	84.2% (n=75)	83.2% (n=212)	0.96
Time from ingestion to NAC for single acute overdose (hours)	8.0 (6.0–10.5) (n=57)	9.0 (7.0–12.0) (n=143)	0.02

Table 2. Baseline characteristics. Data given as median and IQR or percentage. P values obtained by Mann-Whitney U test, or test of proportions. n= number of patients for which data was available for abstraction. *Single acute overdose = ingestion of paracetamol over a period of 1 hour or less, as opposed to staggered overdose.

Conclusion

in this retrospective study, use of the SNAP reduced the duration of inpatient admissions and rate of anaphylactoid reactions.