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SNAPTIMED study: does the Scottish and Newcastle Anti-emetic Protocol achieve timely intervention and management from the emergency department to discharge for paracetamol poisoning?

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Table 1. Baseline characteristics

	SNAP (n=76)	21-hour (n=218)	21-hour vs SNAP p-value
Age, years, median (IQR)	30 (21–46), n=76	29 (21–46), n=218	0.99
Female, %	69.7, (n=218)	67.9, (n=218)	0.77
Weight, kg, median (IQR)	73.0 (60–82.5), n=69	72.3 (61.5–91.5), n=196	0.35
Paracetamol dose ingested, mg/kg, median (IQR)	241 (173–371), n=67	223 (133–326), n=181	0.09
Single acute overdose[a] 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, median (IQR)	8.0 (6.0-10.5), n=57	9.0 (7.0-12.0), n=143	0.02

[a]Single acute overdose = ingestion of paracetamol over a period of 1 hour or less, as opposed to staggered overdose. P values obtained by Mann–Whitney *U* test, or test of proportions. n = number of patients for whom data were available for abstraction. IQR = interquartile range; NAC = N-acetylcysteine; SNAP = Scottish and Newcastle Anti-emetic Protocol.

Introduction

Many hospitals across the UK have instituted the modified 12-hour Scottish and Newcastle Anti-emetic Protocol (SNAP) for paracetamol poisoning but, to our knowledge, no validation has been undertaken of the SNAP for its perceived benefit of decreased length of stay (LoS). While the SNAP theoretically offers shorter treatment duration (12 hours vs 21 hours), it also has more stringent requirements for the cessation of N-acetylcysteine therapy, which may influence real-world effect on LoS.[1] This study aimed to establish whether the SNAP is associated with improvement in hospital LoS, as well as validate the performance of the protocol for the prevention of anaphylactoid reactions and total infusion duration.

Materials and methods

Retrospective chart review from 25 March 2019 to 25 September 2020 was performed. Patients aged 16 or older with a diagnosis of suspected or confirmed paracetamol overdose were included in the analysis if they received treatment for paracetamol poisoning, and the protocol used could be identified. Data were collected for LoS, number of extended treatment infusions used, and evidence of anaphylactoid

Table 2. Comparison of 21-hour and Scottish and Newcastle Anti-emetic Protocol treatment protocols (secondary outcomes)

	SNAP (n=76)	21-hour (n=218)	ARR/ARI (95% CI)
Anaphylactoid reaction, %	5.3	15.4	0.10 (0.03–0.17)[a]
Mean duration of extended NAC infusion required, hours[b]	3.0	2.4	–
Mean total duration of NAC infusion, hours	15.0	23.4	–

[a]Statistically significant. [b]This is the mean time required for infusion across all treated patients, not solely those receiving extended infusions. ARI = absolute risk increase; ARR = absolute risk reduction; CI = confidence interval; NAC = N-acetylcysteine; SNAP = Scottish and Newcastle Anti-emetic Protocol.

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reaction. Inter-rater reliability for data abstraction was assessed using Krippendorff's alpha.

Results and discussion

1,167 records were assessed for eligibility, and 294 were included for analysis. Use of the SNAP was associated with a statistically significant reduction in LoS of –7.9 hours (95% confidence interval –12.6 hours to –2 hours), and a reduced risk of anaphylactoid reaction (number needed to treat = 10; Tables 1 and 2). There were no significant differences in the rate of hepatotoxicity or other adverse outcomes.

Conclusion

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

Reference

1 Pettie JM, Caparrotta TM, Hunter RW *et al.* Safety and efficacy of the SNAP 12-hour acetylcysteine regimen for the treatment of paracetamol overdose. *EClinicalMedicine* 2019;11:11–7.