Prescription proforma for Acetylcysteine for the management of oral paracetamol overdose in adults

Dr L. Faulkner, Dr K. Russell, Ernestine Edwards, Dr J. Abed, Dr E. Akoud

Emergency Department, Hull Royal Infirmary

Hull University Teaching Hospitals NHS Trust

Introduction

Paracetamol is the most common drug taken in overdose in the UK, and guidelines recommend Acetylcysteine for certain patients. Acetylcysteine prescribing is complex to complete leading to a potential for prescription errors. In addition, completing the prescription is a time-consuming process which can delay initiation of treatment.

Methods

Patient notes of a sample of patients who received Acetylcysteine for management of Paracetamol overdose were reviewed. Additionally, a qualitative questionnaire was conducted assessing time taken to prescribe Acetylcysteine and confidence levels amongst prescribers.

Results

Analysis of Acetylcysteine prescriptions showed a high error rate with 70% (n=10) of prescriptions containing a prescribing error of any kind. Errors included incorrect infusion volumes and drug concentrations, with 30% of prescriptions either altered or rewritten entirely.

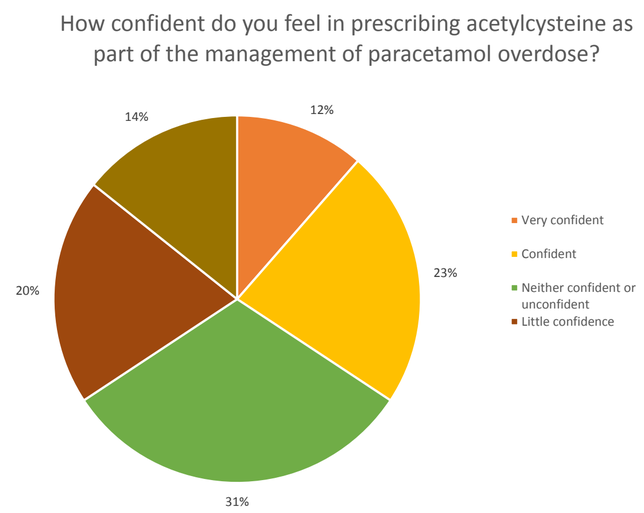
Questionnaire responses showed prescribers lack confidence in Acetylcysteine prescription and find this task time-consuming; 80% (n=34) felt this took longer/much longer than other drugs they regularly prescribe and 65% felt less confident/much less confident in this prescription compared to other prescriptions they regularly complete. Overall, those who completed the questionnaire showed considerable support towards the idea of a prescription proforma for Acetylcysteine for management of paracetamol overdose.

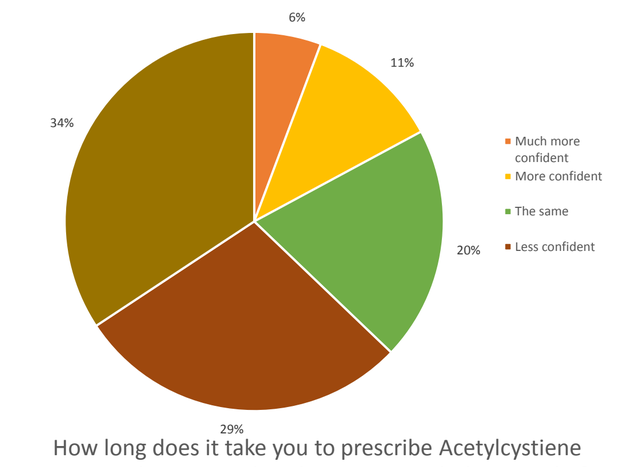
Discussion

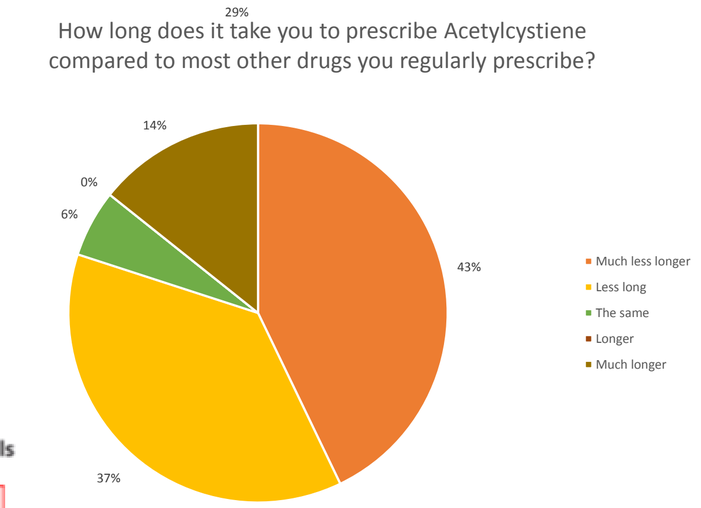
Acetylcysteine is a complex prescription which prescribers in our trust currently lack confidence in prescribing.

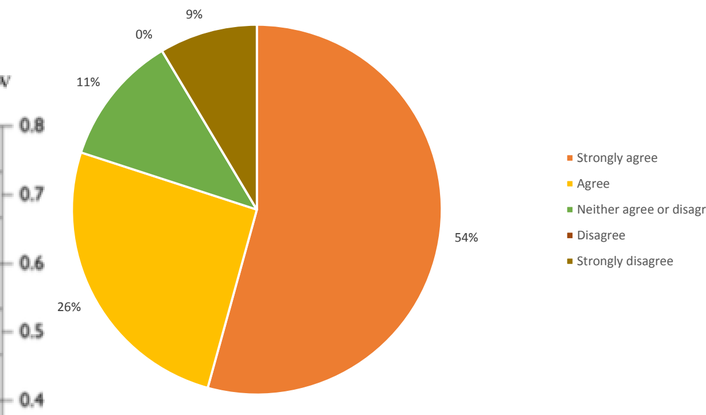
We have developed a proforma based on guidelines from the BNF[1], Toxbase[2], the Royal College of Emergency Medicine[3] and the Hull University Teaching Hospitals Trust guidelines[4] and propose launching this for use within the trust.

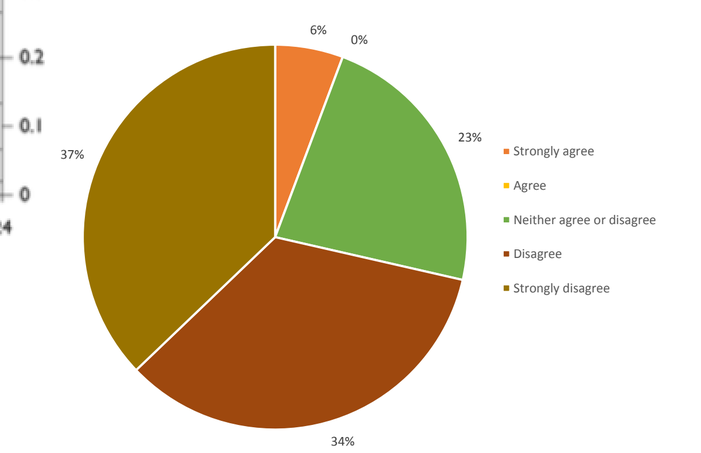
Through this we aim to improve patient safety through preventing drug prescription errors. We also predict this will decrease the time taken for the prescription to be completed, allowing prompt initiation of acute treatment, thus improving patient care. This may also facilitate timely movement of patients through the acute care settings, to help meet national targets.

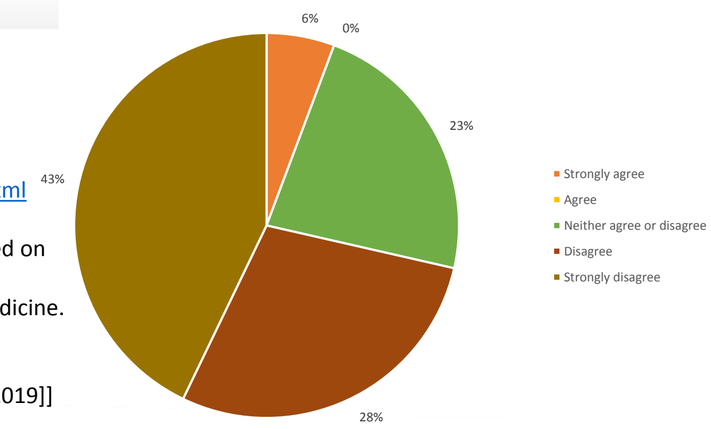












Acetylcysteine Infusion for the Management of Oral Paracetamol Overdose in Adults

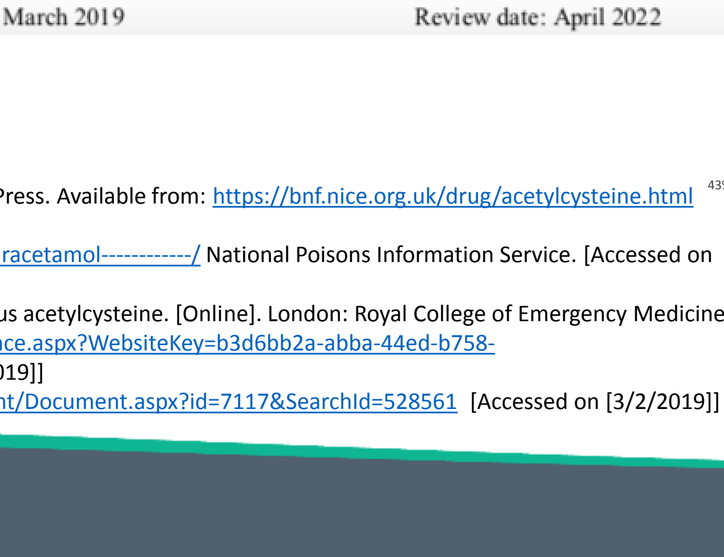
Patient Name	
HEY number/NHS number	
Date of Birth	

Allergies			
Reaction			
Name	GMC	Date	
Patient's weight	kg	Date recorded	

	Infusion 1	Infusion 2	Infusion 3
Drug Name	Acetylcysteine	Acetylcysteine	Acetylcysteine
Dose	.....ml of 200mg/ml	.....ml of 200mg/ml	..... ml of 200mg/ml
Infusion fluid* (Please tick)	☐ 200ml 5% dextrose ☐ 200ml 0.9% sodium chloride	☐ 500ml 5% dextrose ☐ 500ml 0.9% sodium chloride	☐ 1000ml 5% dextrose ☐ 1000ml 0.9% sodium chloride
Infusion rate	..... ml/hour	..... ml/hour	..... ml/hour
Infusion duration	1 hour	4 hours	16 hours
Prescriber's Name			
Prescriber's signature			
Date			
Administrator signature			
Second administrator			
Date and time			

Weight (kg)	Volume (ml)	Infusion rate (ml/hr)	Volume (ml)	Infusion rate (ml/hr)	Volume (ml)	Infusion rate (ml/hr)
☐ 40-49kg	34	234	12	128	23	64
☐ 50-59kg	42	242	14	129	28	64
☐ 60-69kg	49	249	17	129	33	65
☐ 70-79kg	57	257	19	130	38	65
☐ 80-89kg	64	264	22	131	43	65
☐ 90-99kg	72	272	24	131	48	66
☐ 100-109kg	79	279	27	132	53	66
☐ ≥110kg	83	283	28	132	55	66

Please mark blood Paracetamol level on treatment graph below



Indication for treatment (please tick)

- ☐ Paracetamol level above treatment line
- ☐ Staggered overdose
- ☐ Timing uncertain
- ☐ Other (please specify).....

Authors: Dr L. Faulkner, Dr J. Abed, E. Edwards, R. Flanagan, H. Hudson, D. Reffold March 2019 Review date: April 2022

References:

1. Joint Formulary Committee. British National Formulary. [Online]. London: BMJ Group and Pharmaceutical Press. Available from: https://bnf.nice.org.uk/drug/acetylcysteine.html [Accessed on [3/2/2019]]
2. Toxbase. Paracetamol. [Online]. Available from: https://www.toxbase.org/poisons-index-a-z/p-products/paracetamol----------/ National Poisons Information Service. [Accessed on [3/2/2019]]
3. Royal College of Emergency Medicine. 2012. Paracetamol overdose: new guidance on the use of intravenous acetylcysteine. [Online]. London: Royal College of Emergency Medicine. Available from: https://www.rcem.ac.uk/RCEM/Quality-Policy/Clinical_Standards_Guidance/RCEM_Guidance.aspx?WebsiteKey=b3d6bb2a-abba-44ed-b758-467776a958cd&hkey=862bd964-0363-4f7f-bdab-89e4a68c9de4&RCEM_Guidance=6 [Accessed on [3/2/2019]]
4. Hull University Teaching Hospitals trust guidelines available from: https://pattie.info/Interact/Pages/Content/Document.aspx?id=7117&SearchId=528561 [Accessed on [3/2/2019]]