USE OF SINGLE DOSE ACTIVATED CHARCOAL: A SURVEY OF AUSTRALIAN EMERGENCY DOCTORS

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Objectives: Single-Dose-Activated-Charcoal(SDAC) is recommended to be used within the first few hours of ingestion to minimise systemic absorption of some toxins(1). However its use has declined in recent years. This study compared the knowledge of the indications for the use of SDAC by Emergency doctors and toxicologists working in Australia.

Methods: We conducted a cross-sectional survey of emergency registrars, consultants and toxicologists in Australia. The survey was distributed through convenience sampling with paper copies and email link. Participants were given six clinical scenarios, in which they were asked if they would or would not administer SDAC or were unsure. The responses from the emergency doctors were compared with that given by the clinical toxicologist. Statistical calculations were performed using Fisher's Exact test, statistical significance p = <0.05.

Results: There were 369 consultants and registrars who participated in the survey, 16 toxicologists provided answers for comparison. (Table 1)

Table 1: Results of the survey

		APAP 15 g presents within 1 hr	**APAP 15 g presents 3 hr post ingestion**	**Toxins not bound by SDAC: iron**	**Toxins not bound by SDAC: methylated spirit**	**Verapamil(ER) 480mg, 3yr presents 90 mins post ingestion**	**Venlafaxine (XR) 4.2 g presents 2 hrs post ingestion**
Emergency Physicians And Emergency Registrars	**Total Respondents**	355	348	347	337	344	337
	Would offer SDAC	187(53%)	24(7%)	28(8%)	5(2%)	148(43%)	97(29%)
	Would not offer SDAC	128(36%)	293(84%)	268(77%)	291(86%)	77(22%)	153(45%)
	Unsure	40(11%)	31(9%)	51(15%)	41(12%)	119(35%)	87(26%)
Clinical Toxicologist	**Total Respondents**	16	15	15	15	15	15
	Would offer SDAC	14(88%)	2(14%)	0	0	13(87%)	8(53%)
	Would not offer SDAC	2(12%)	13(87%)	15(100%)	15(100%)	2(14%)	7(47%)

Difference between the groups (p value)*		P=0.029	NS**	NS	NS	P=0.001	P=0.018

***Fischer's Exact Test**

****NS – not significant**

Discussions: There were 3 scenarios where there was a significant difference in responses. Almost all toxicologists would administer SDAC to a child with suspected verapamil ingestion and a toxic paracetamol ingestion presenting within an hour, compared to 43% and 53% of emergency doctors respectively. However 35% were unsure and would seek further advice in the verapamil case and indeed there are no available guidelines to follow. Whereas current paracetamol guidelines recommend SDAC be offered to alert patients who present within 1-hour of ingestion of a toxic dose(2). Respondents who did not offer SDAC, cited side effects, in particular vomiting and aspiration, and the availability of acetylcysteine. Studies show no difference in vomiting rates between SDAC and no decontamination(3), and the risk of aspiration is low(4). Administering SDAC within 2-hours, has shown to reduce the need for acetylcysteine(5). Acetylcysteine has a high rate of adverse effects, with reported rates of up to 48%(6). In paracetamol overdose, SDAC is not life saving, however it is low risk intervention if the patient is alert, can reduce the need for acetylcysteine and decrease length of stay. Whether to administer SDAC is not always straightforward, which is demonstrated in the venlafaxine scenario that had divided responses, in both groups. The majority of doctors were aware of which drugs were not bound to charcoal.

Conclusion: Further education is needed regarding the indications and low risk of SDAC in an alert patient. This study highlights the importance of the availability of expert toxicology advice to ensure better patient care.