A review of recommendations for and use of single dose activated charcoal in enquiries to the UK National Poisons Information Service (NPIS) between 01/01/2017 and 30/06/2018

Moyns E,[1] Elamin MEMO,[1] Sandilands EA,[2] Thomas SHL,[3] Thompson JP,[4] Bradberry SM.[1]

[1]NPIS (Birmingham Unit), City Hospital, Birmingham, UK;
[2]NPIS (Edinburgh Unit), Royal Infirmary, Edinburgh, UK;
[3]NPIS (Newcastle Unit), Regional Drug and Therapeutics Centre, Newcastle, UK;
[4]NPIS (Cardiff Unit), University Hospital Llandough, Cardiff, UK.

Objective

To review enquiries to the UK National Poisons Information Service (NPIS) discussing the use of single dose activated charcoal (SDAC).

Methods

A retrospective analysis of UK NPIS enquiries between 1 January 2017 and 30 June 2018 was undertaken for enquiries containing the terms 'charcoal' or 'SDAC', and/or where pre-defined fields for 'charcoal given' or 'charcoal recommended' had been selected.

Results

There were 972 relevant enquiries of which 898 involved SDAC, representing 1.6% of all NPIS enquiries involving ingestion received during this period. SDAC administration was recommended in 395 enquiries at varying times post-ingestion as shown in Figure 1.

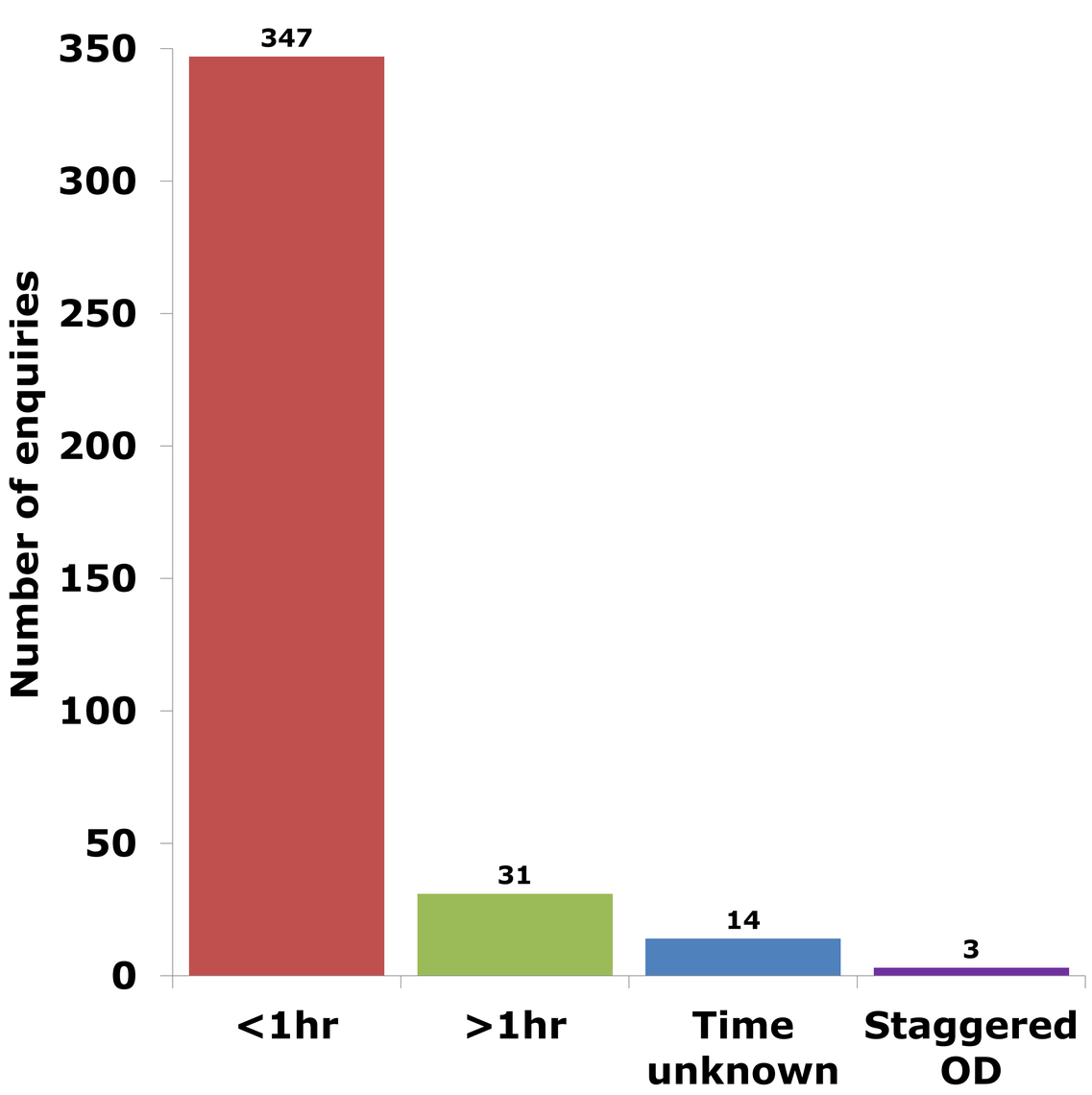

Figure 1. Time post-ingestion SDAC recommended (n=395)

In 347 enquiries where SDAC was recommended to be given within 1 hour post-ingestion the source of enquiry was; ambulance (62.5%), prison (30.0%), hospital (7.2%) and police (0.3%). The shortest time post-ingestion to SDAC recommendation was 5 minutes.

SDAC was recommended beyond 1 hour post-ingestion in 31 enquiries, in 14 enquiries with unknown time of ingestion and in 3 staggered overdose enquiries.

Reasons for recommending administration of SDAC >1hr included large overdoses (n=11), ingestion of agents associated with potentially severe toxicity for which TOXBASE® advises considering SDAC >1hr (i.e. colchicine, foxglove, opiates, tricyclic antidepressants) (n=8) and sustained release drugs (n=7). The longest time post-ingestion for SDAC recommendation was 36 hours (CT scan demonstrated unknown tablets in the stomach).

In 131 enquiries SDAC had already been administered at the time of the enquiry [source; hospital (46.6%), prison (28.2%), ambulance (24.4%) and NHS walk in centre (0.8%)]. SDAC was known to have been administered <1hr post-ingestion in 58% of these 131 enquiries. Vomiting (n=10, 7.6%) was the only adverse effect reported. In 21 enquiries, SDAC was offered but declined by the patient. In a further 21 enquiries, the patient was referred to hospital from primary care for SDAC administration. SDAC was recommended but unavailable in 62 enquiries [ambulance (51.6%) and prison (48.4%)]. The use of SDAC was discussed but not recommended in 268 enquiries; the reasons are shown in Figure 2.

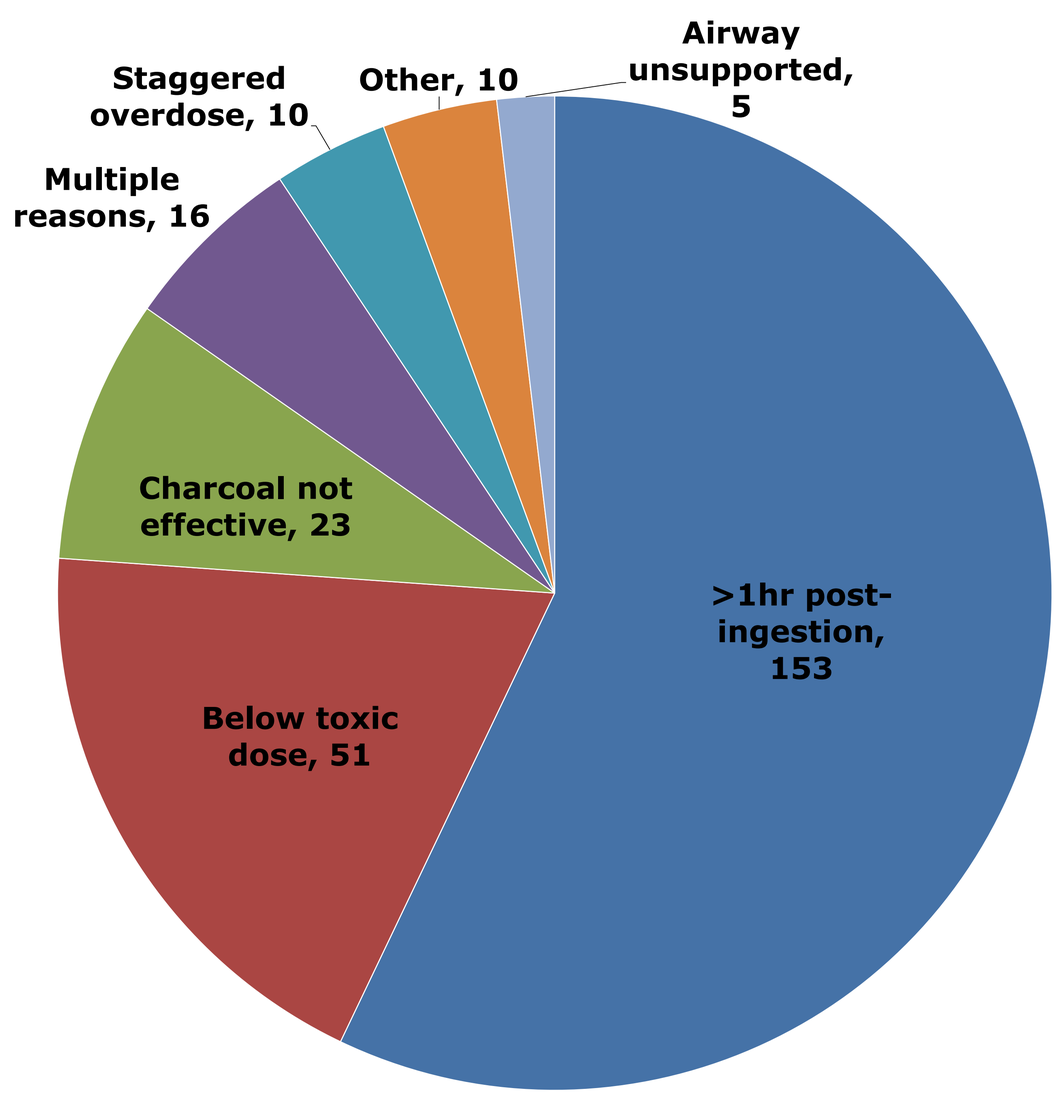

Figure 2. Reasons SDAC not recommended (n=268)

Conclusions

The NPIS makes an important contribution to the use of SDAC in the poisoned patient. There may be a role for wider availability of activated charcoal to ambulance and prison services. Assessment of SDAC efficacy would require detailed enquiry follow up which is limited by resource availability. Incidence of adverse effects reported to the NPIS from SDAC administration is low.