ACUTE SALICYLISM DUE TO ACCIDENTAL INGESTION OF A TRADITIONAL MEDICINE

A S Malik, M H Zabidi, A R Noor

ABSTRACT

Traditional medicine is practised to some degree in all cultures. Many different types of herbal preparations and "oils" are widely used in Malaysia, too. We report a case of acute salicylism due to accidental ingestion of one brand of such oils. Compulsory labelling of traditional drugs with their chemical ingredients is suggested for proper and timely management of such cases.

Keywords: *traditional medicine, acute salicylism.*

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INTRODUCTION

Traditional medicine has been practised to some degree in all cultures, Malaysia, being a multi-racial society of Malays, Indians, and Chinese, has a diversity of traditional medicine. Traditional healers (bomohs) and medicines are quite popular[1]. Many types of "oils" are widely used for treatment of a variety of conditions. Used mainly for external application, they are also administered orally for a number of indications.

Minyak Cap Akar (MCA) is one of the many brands of such oils. It is a light green oil with a strong odour. It is found to contain at least nine different chemicals, which include two phenolic compounds, one of which is Methylsalicylate. Three nitrogenous compounds have also been detected.

We report a case of acute salicylism due to accidental poisoning with MCA.

CASE REPORT

A 9½ month old male Malay child was admitted to the paediatric ward at 1315 hours with complaints of accidental ingestion of traditional drug at 0930 hours, followed by vomiting at 1000 hours and generalised tonic clonic fits at 1100 hours.

The patient comes from a middle class family and is the youngest of six children. He was perfectly well before this incident. He was a full-term normal hospital delivery without any antenatal, birth or postnatal complications. His milestones were appropriate and he was fully vaccinated. On the day of admission, while playing he was reported to have ingested about 20 ml of traditional medicine. His mother was alarmed by a sudden loud cry of the child. She noticed the child vomiting. The child was brought to a general practitioner who gave some medicine to induce vomiting. The child vomited twice subsequently. One hour later while at home the child developed a generalised tonic fit with uprolling of eye balls. This lasted for about 3 to 4 minutes. Within the next 30 minutes, while on way to hospital he had four further episodes of generalised seizures. The seizures were controlled by administration of diazepam suppository in the Accident and Emergency Department at 1130 hours. At that time the child was responding only to painful stimuli. His vital signs were stable. After securing the airway and inserting an intravenous line he was transferred to a paediatric ward.

On arrival in the ward he was afebrile but was not dehydrated. His respiratory rate was 60/min. There was no cyanosis. The heart rate was 120 beats/min and his blood pressure was 91/53 mmHg. His anterior fontanelle was normal. No abnormalities were detected on examination of his lungs, heart and abdomen. He was drowsy, not responding normally to calling by his mother. He was able to open his eyes spontaneously but he did not seem to recognise his mother. There was generalised hypotonia. Both the pupils were equal and reacting to light. Fundoscopic examination did not reveal any abnormalities. The child was kept on "Nil by mouth" and intravenous fluids were continued. Blood samples were taken for toxicologic screening. Other investigations were also carried out (Tables I and II). Toxic screening revealed a very high and toxic level of salicylate (Fig 1). The child was closely observed in the intensive care unit. He was given ample amounts (up to 200ml/kg) of intravenous fluids, sodium bicarbonate and frusemide. Activated charcoal was administered regularly (1 gm/kg body weight immediately and every four hourly). His arterial blood gases, electrolytes, blood glucose, prothrombin time, liver function tests and serum ammonia were monitored. Serum level of salicylate was measured at 6 hourly intervals.

By the evening the child's conscious level was better. The respiratory rate dropped to 48/min. But his blood gases were grossly abnormal and serum calcium level was dropping (Tables I and II). Calcium gluconate was added to the treatment. He developed one spike of fever, temperature rising to 38°C. This was controlled by tepid sponging.

The child improved gradually and was discharged four days later in a satisfactory condition. He was seen one month later and was found to be well.

Table I – Blood gas values

Time	1315	1530	2010	2200
pH	7.37	7.55	7.57	7.55
$PaCO_2$ (mmHg)	12.5	11.9	2.0	17.7
PaO_2 (mmHg)	141.5	129.2	137.6	113.5
Bicarbonate	7.0	10.2	1.8	20.7
Base excess	–14.1	–6.7	–12.6	–2.8
O_2 Saturation	98.1	99.2	99.0	98.9

Department of Paediatrics
School of Medical Sciences
Universiti Sains Malaysia
Kubang Kerian 16150
Kelantan
Malaysia

A S Malik, DTCH
Lecturer

M H Zabidi, MRCP
Lecturer

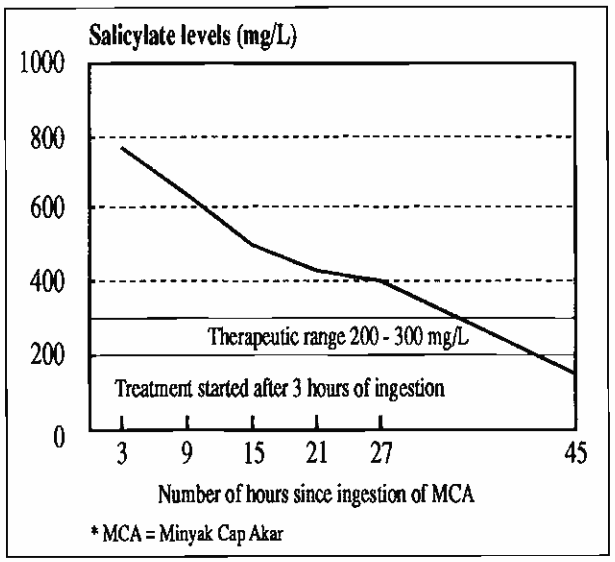
A R Noor, MSc
Lecturer and Head

Correspondence to: Dr A S Malik

Table II – Blood chemical values

Variable	Day 0
Sodium (mmol/L)	140
Potassium (mmol/L)	3.7
Urea (mmol/L)	3.0
Calcium (mmol/L)	1.90
Serum ammonia (micmol/L)	41.3
Uric acid (micmol/L)	251
Serum creatinine (micmol/L)	54
Total proteins (g/L)	60
Albumin (g/L)	40
Globulin (g/L)	20
AST (iu/L)	67
ALP (iu/L)	308
ALT (iu/L)	32
Serum bilirubin (mmol/L)	7

Fig 1 – Salicylate levels in relation to duration after ingestion of MCA*



DISCUSSION

Although the incidence of acute salicylate poisoning has decreased considerably over the years, salicylates make a considerable proportion of drug poisoning. In one recent series, out of 26 children admitted for drug poisoning, 4 were due to salicylates[2]. Contrary to the previous experience, chronic salicylism today produces a greater morbidity than does acute salicylate poisoning in the paediatric age group[3]. Chronic salicylism can occur because of therapeutic errors, administration of several salicylate containing preparations simultaneously or normal dosing in a dehydrated child.

It is important to realise that both acute and chronic salicylate poisoning can occur due to overdose or prolonged use of traditional medicines which, in many countries, are available over-the-counter and also dispensed by traditional healers. Each of these medicines is usually recommended for many conditions, thus widening their usage. As toxicologic screening of blood and urine are available only in limited centres, therefore it is appropriate to demand that all traditional medicines should carry labels stating their chemical ingredients, so that in cases of acute or chronic poisoning the patient could be helped more efficiently.

In the case of MCA, according to the manufacturer's instructions, the main indications for use are abdominal pain, dyspepsia, ligament strain, nocturnal enuresis, tooth-ache, burns, poisonous bites, scalds, minor cuts and for women in their immediate postnatal period. It can be used both as a topical agent as well as an oral medicine.

On enquiry the manufacturer revealed that MCA is a mixture of "minyak kayu hitam" (oil of wintergreen), camphor, peppermint, menthol and white oil (oil of eucalyptus) as a base. The exact level of methylsalicylate in MCA could not be determined because of overlapping of bands (of similar peaks) of other constituents.

In the management of acute salicylism gastric lavage or emesis is recommended even 12-24 hours after ingestion because salicylates delay gastric emptying. Activated charcoal is given orally after gastric emptying is achieved.

Repeated doses of activated charcoal (gastrointestinal dialysis) produce a further enhancement of salicylate clearance over urinary alkalinisation in young children[4,5].

Peritoneal dialysis is less effective than alkaline diuresis but it can be employed in the presence of oliguria.

Charcoal haemoperfusion should be considered in the severely ill patient with renal failure, severe central nervous system manifestations, pulmonary oedema, or failure to control severe acidosis. Haemodialysis, if available, is the treatment of choice in these situations.

CONCLUSION

Despite their extensive use, traditional medicines are not without danger. It is recommended that labelling practices for traditional medicines should also follow all the precautions observed for allopathic medicines, including the names and amounts of chemical ingredients.

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