Case report: oral chloroform poisoning

Mare Oder RN MSc, Estonian Poisoning Information Centre
Kristiina Põld MD, Estonian Poisoning Information Centre, North Estonian Medical Centre

Introduction

The Poisoning Information Centre (PIC) received a call from 90-year old man’s relative. The patient had ingested mistakenly 10 minutes previously a sip of chloroform. Chloroform, a halogenated hydrocarbon, is clear, colorless, and volatile liquid with radiopacity. Poisonings after oral chloroform ingestion, remains rare and information regarding the clinical course and management dilemmas of chloroform ingestions is limited. Chloroform acts mainly as a central nervous system (CNS) and cardiac depressant. As little as 10 mL in an acute ingestion may result in central nervous system depression and death.

Through active metabolites production of a toxic metabolite by the cytochrome P450 system, delayed hepatic and renal toxicity may occur with a peak elevation of liver enzymes on 6th and 5th day after exposure. Treatment with N-acetylcysteine (NAC) has been proposed to prevent liver injury. The utilization of NAC for chloroform-induced hepatotoxicity has demonstrated successful outcomes in 2 cases:

1. Ingestion of about 75 mL of chloroform, treated with intravenously administered NAC 150 mg/kg over 1h, followed by 50 mg/kg over 4h, after that regimen of 6.25 mg/kg/h was continued for 6 days.
2. Ingestion of about 100 mL of chloroform treated with NAC 600 mg/day for 11 days.

Objective

Aim of this study is to describe retrospectively the clinical findings, treatment and outcome of an accidental ingestion of liquid chloroform by a 90-year old man.

Case report

Drowsiness began shortly after ingestion, coma developed in 10 minutes, bradycardia was detected in the ambulance, approximately on the 45th minute. The patient was admitted to hospital comatose (GCS 3p, SpO2 68%, RR 80/50mmHg, wide QRS-complex 46x/min) on the 80th minute.

Prior to arrival the emergency department was informed by the Poisoning Information Centre about the potential health effects of chloroform and hepatotoxicity prevention options. Administration of NAC i.v in loading dose (150 mg/kg) was initiated within one hour of admission. The patient was intubated and ventilated with 100% oxygen, diuresis was forced by furosemide, haemodynamics stabilized with infusion of vaspressors.

The patient was transferred after 4 hours and 15 minutes from ingestion to the ICU. Within the next 24-hours his general condition stabilized with supportive care. The patient was extubated. Initially the patient remained oxygen dependent and needed small doses of vaspressors.

Slight hepatorenal damage developed (maximal values of AST 87 U/l, ALT 46 U/l, Crea 240 μmol). The patient was transferred to the nursing department on the 16th day after ingestion with satisfactory status, with need for assistance in everyday life due to previous comorbidities.

Conclusion

We report the case of an elderly man who accidentally ingested chloroform and recovered after supportive treatment with NAC.

For more information on:
E-mail: mare.oder@16662.ee
kristina.pold@16662.ee
Web: www.16662.ee

References

1. CHLOROFORM, POISINDEX® Managements, Micromedex 2.0, © 2013 Truven Health Analytics Inc. (28.01.2013)

Acknowledgements

North Estonian Medical Centre