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Short Communication

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Early Hemodialysis Outcome in Methanol Poisoning, Tripoli, Libya

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ABSTRACT

Methanol, also known as wood alcohol, is a commonly used organic solvent that, because of its toxicity, can cause metabolic acidosis, neurologic squeal, visual disturbance and even death when ingested.

The current study was aimed to describe the presenting symptoms of methanol poisoning and to assess the effect of early hemodialysis on the outcome of methanol poisoned patients.

This research depends on a descriptive study using a case series report done by collecting data from the medical reports of methanol poisoned patients who had presented and admitted in Tripoli Medical Center (TMC).

This study includes 88 methanol poisoned patients in different age group, the youngest was18 years old and the oldest was 56 years old, the mean of age was 29 years.

The number of male patients was more than that of females, 86 (97%) versus 2 (2.3%) respectively.

The first most common presenting symptom was gastrointestinal upset which reported in 30 (34.1%) cases. The second most common presenting symptom was dizziness occurred in 21 (23.9) cases.

Other presenting symptoms were visual disturbance, dyspnea and others like cough and wheezing which occurred in 14 (15.9%), 12 (13.6%) and 11 (12.5%) respectively.

Hemodialysis was done early (within 24 hours) for severely ill patients (those who had PH less than 7.1 and bicarbonate concentration less than 5 mmol/l).

Accordingly 28 (31.8%) cases underwent hemodialysis. The outcome of 28 patients who underwent hemodialysis was as the following: 18 (64%) cases were survived and 10 (36%) cases were died.

The most common presenting symptoms in methanol poisoning patients are gastrointestinal upset, dizziness and visual disturbance.

Early hemodialysis in severely ill methanol poisoned patients increase the survival and improve the outcome.

Keywords - *Methanol poisoning; Early Hemodialysis.*

INTRODUCTION

It is a constituent of many commercially available industrial solvents and of poorly adulterated alcoholic beverages. Methanol toxicity remains a common problem in many parts of the developing world, especially among members of lower socioeconomic classes.[2]

Sophisticated imaging techniques have enabled a better understanding of the clinical manifestations of methanol intoxication. Additionally, neurologic complications are recognized more frequently. This is possible because of early recognition of the toxicity and because of advances in supportive care.[3,4]

Hemodialysis and better management of acid-base disturbances remain the most important therapeutic improvement.[5]

The objectives of the study were; to describe the presenting symptoms of methanol poisoning and to assess the effect of hemodialysis on the outcome of methanol poisoned patients.

MATERIALS AND METHODS

This research depends on a descriptive study using a case series report done by collecting data from the medical reports of methanol poisoned patients who were admitted to Tripoli Medical Center (TMC) in the period between 8th of March 2013 and 14th of March 2013 (Figure 1).

This study includes 88 methanol poisoned patients in different age group, the youngest was18 years old and the oldest was 56 years old, the mean of age was 29 years. The number of male patients was more than that of females, 86 (97%) versus 2 (2.3%) respectively. ABG was done to all patients at presentation. The collected data coded and analyzed using SPSS soft version 10.

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RESULTS

The first most common presenting symptom was gastrointestinal upset which reported in 30 (34.1%) cases. The second most common presenting symptom was dizziness occurred in 21 (23.9) cases.

Other presenting symptoms were visual disturbance, dyspnea and others like cough and wheezing which occurred in 14 (15.9%), 12 (13.6%) and 11 (12.5%) respectively (Figure 2).

The ABG was done for all patients at presentation and revealed a minimum PH of 6.75 and a maximum of 7.45. The mean of PH was 7.19 (SD was 0.15) and median was 7.21.

86 (97.7%) cases were admitted with metabolic acidosis. Bicarbonate concentration was ranged from 2 to 37mmol/l. The mean was 9.7 mmol/l (SD 7.23) and the median was 8 mmol/l. 84 (95.5%) cases received I.V sodium bicarbonate at presentation.

Hemodialysis was done early (within 24 hours) for severely ill patients (those who had PH less than 7.1 and bicarbonate concentration less than 5 mmol/l).

Accordingly 28 (31.8%) cases underwent hemodialysis. The outcome of 88 cases was as following: 75 (85%) cases had survived and 13 (14.7%) cases had died. The outcome of 28 patients who underwent hemodialysis was as following: 18 (64%) cases had survived and 10 (36%) cases had died.

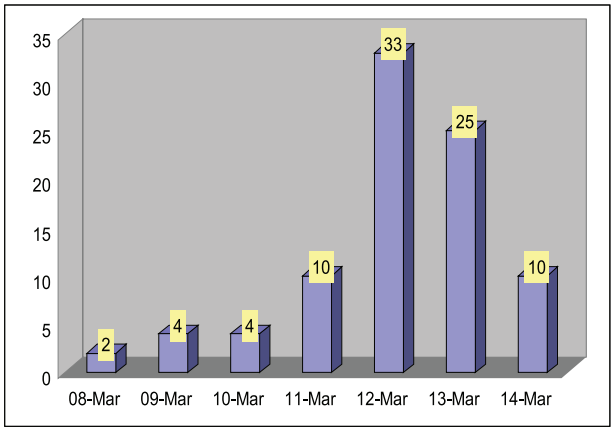

Figure 1: Number of patients according to the date of admission in the period from 8 March 2013 to 14 March 2013.

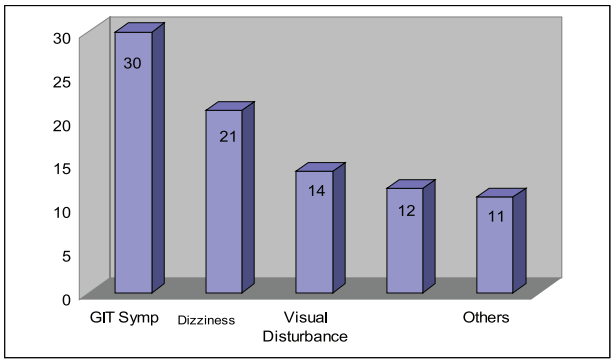

Figure 2: Frequency of presenting symptoms in methanol poisoned patients.

DISCUSSION

Acute methanol poisoning should be suspected in all patients with metabolic acidosis with an elevated anion gap, neurological deterioration or vision disturbances. Metabolic acidosis was the most striking disturbance seen in our patients. It is probably due to the accumulation of formic acid and lactic acid.[6,7]

Rapid recognition and early treatment are crucial. It is important to emphasize that the onset of methanol toxicity is delayed when ethanol is co ingested.

The possibility of concomitant ethanol and toxic alcohol ingestion should always be considered, particularly in alcoholics, who may ingest alcohol in any form. Methanol is rapidly and completely absorbed after oral ingestion.

Most of the cases presented to the hospital complaining of GIT symptoms (34%) followed by dizziness (24%) then visual disturbance (16%).

The outcome of methanol poisoning correlates with the amount of methanol consumed and the subsequent degree of metabolic acidosis; more severe acidosis confers a poorer prognosis.[6,7]

For that we decide to do early hemodialysis within 24 hours for patients who have severe metabolic acidosis (those who had PH less than 7.1 and bicarbonate concentration less than 5 mmol/l).

The number of patients who underwent hemodialysis was 28, 64% had survived and 36% had died and this indicate that early hemodialysis improve the survival of patients who expected to die because of severe metabolic acidosis

CONCLUSION

The most common presenting symptoms in methanol poisoned patients are gastrointestinal upset, dizziness and visual disturbance. Early hemodialysis in severely ill methanol poisoned patients increase the survival and improve the outcome.

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