



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research  
Vol. 10, Issue, 01(D), pp. 30450-30452, January, 2019

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## Case Report

### ACUTE ARSENIC POISONING ON BASIS OF AUTOPSY AND CLINICAL FEATURE -A CASE REPORT

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DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1001.3062>

#### ARTICLE INFO

##### Article History:

Received 12<sup>th</sup> October, 2018

Received in revised form 23<sup>rd</sup>

November, 2018

Accepted 7<sup>th</sup> December, 2018

Published online 28<sup>th</sup> January, 2019

##### Key Words:

Acute, Arsenic, poisoning, cyanosis, haemorrhagic patches, tachypnea, tachycardia, velvety streaks, autopsy.

#### ABSTRACT

A joint family was residing in Indore district Madhya Pradesh with eleven members. Grand father and mother, two sons and with their wife's, elder son has three children younger son has two children. Elder son and his wife with his all three children's were affected by almost same sign and symptoms. Sign and symptoms initially seen in children and severe affect seen in Children. All affected five person were died, all dead bodied gone through the autopsy examination. Out of them one dead body post-mortem examination conducted at our mortuary of forensic medicine department MGM medical college Indore. Other dead body autopsy conducted on other post mortem examination centre in Indore. Before death person admitted in the hospital clinical finding and symptoms were Diarrhoea and vomiting, low grade fever, breathlessness, Abdominal pain and lower limb pain, Hypotension, Finally semiconscious, cyanosis, tachypnea, tachycardia and hypotension and death, Feature strongly suggestive of acute arsenic poisoning and post-mortem examination finding were cyanosis present on nail bed of all fingers of both hands. Distal part of 2<sup>nd</sup> toe of left foot was bluish and blackish discoloration seen, on dissection looks like necrosis tissue. Around the anus orifice area skin and mucosa was blackish discolorations seen. Dryness of the conjunctivae in form of taches noire was seen in both eyes. Internal findings of autopsy were in stomach contained about 50 gm mucoid material, mucosa red velvety streaks appearance, multiple sub mucosal haemorrhagic patches seen in stomach, Sub mucosal haemorrhagic patches also seen in small intestine, multiple small haemorrhagic patches seen over the surface of heart lungs and liver. Post-mortem findings also coincide with the acute arsenic poisoning.

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#### INTRODUCTION

For a long time (until a few decades ago), arsenic had been used as homicidal poison. It was a poison of choice because in both acute and chronic administrations the signs and symptoms mimic natural disease processes and fail to arouse suspicion of foul play. Most commonly arsenic trioxide (As<sub>2</sub>O<sub>3</sub>) salt used for homicidal purpose, advantage of being odourless and tasteless and therefore easy to administer. It's available in powder and porcelain type of solid mass. The fatal dose of arsenic trioxide is required very less amount of about 200–300 mg. The lethal oral dose in humans is variously reported as 120-200 mg [1], 100-300 mg [2] or 200-300 mg [3, 4]. In general, the pentavalent form of arsenic (arsenate) is approximately 60 times less toxic than the trivalent form (arsenite) because it is less water soluble [1]. The most toxic form is arsine gas. The clinical manifestation of acute arsenic toxicity is diverse involving the digestive, cardiovascular,

neurologic, cutaneous, and renal system. In the gastrointestinal form of acute arsenic poisoning average fatal period may range from 12 to 48 hours, In this case fatal period was about 36 hours.

##### Case history

A couple and their all three children were affected by same sign and symptoms. Sign and symptoms initially seen in children and severe affect seen in Children. All affected five person were died, four member post-mortem was conducted on other centre of Indore and one nine year old female child out of them post-mortem conducted in our mortuary of forensic medicine department MGM medical college Indore. Before death the child was admitted in the Bandari hospital Indore on date 31.03.2017 time about 9.0 pm. There is history of unknown poisonous substance ingestion 2hours before the admission. Child condition progressively deteriorated then they

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refers to Bombay hospital Indore on date 01.04.2017 time 12.25 am and patient died on 02.04.2017 time 6.20am.

### **Objectives**

- To know the various clinical feature and autopsy finding for the diagnosis of acute arsenic poisoning.
- To show the peculiar interesting photographs to help in diagnosis of acute arsenic poisoning.

## **DISCUSSION**

Sudden onset of symptoms present in this case and clinical feature suggestive of acute arsenic poisoning. Symptoms of acute intoxication usually occur within 30 minutes of ingestion but may be delayed if arsenic is taken with the food. [5] Peculiar stomach findings Stomach contained about 50 gm mucoid material, mucosa red velvety streaks appearance, Multiple sub mucosal haemorrhagic patches.(fig-01) [6] present in this case were strongly suggestive of acute arsenic poisoning. Bluish blackish discoloration seen 2<sup>nd</sup> toe finger of left foot on cut looks like necrosis tissue.(fig -04) due to vasospasm and peripheral vascular insufficiency culminating in “black foot disease” (a gangrenous condition affecting the extremities ) [7] which is contrast it commonly seen in chronic arsenic poisoning. Radiological examination of the dead body advised but no any specific findings seen. It is due to rapid absorption and elimination through the urine. Tachycardia and myocarditis present in hospital records which is coincide with acute arsenic poisoning cardiac arrhythmias, ventricular fibrillation, and ventricular tachycardia present. Cardiac symptoms are due to decreased cardiac output due to hypovolaemia and direct toxic effect on the cardiac muscle. [8] Signs and symptoms mimic with the natural disease like cholera, food poisoning and heart disease which concur with the feature seen in this case. Multiple small haemorrhagic patches seen in the heart, lungs and liver seen. Haemorrhages seen in all abdominal organ lung heart and brain occasionally seen on the larynx and trachea present in acute arsenic poisoning. [6] Similar case reported in Sweden accidentally inhaled and ingested arsenic trioxide (arsenic Silo) after 40 minute of exposure patient started vomiting, coughing heavily, and suffering from dyspnoea. The physical examination revealed tachycardia. [9]

## **CONCLUSION**

Clinical feature and autopsy finding suggest that victim died due to acute arsenic poisoning.

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**How to cite this article:**

Ashok Kumar Rastogi *et al.* 2019, Acute Arsenic Poisoning on Basis of Autopsy and Clinical Feature -A Case Report. *Int J Recent Sci Res.* 10(01), pp. 30450-30452. DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1001.3062>

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