Case Report

Medicine Section

Death related to **Herbal Therapy** for **Joint Pains –** A rare case of *Gloriossa Superba* **Poisoning**

PETER GEORGE MD

ABSTRACT

Native practitioners in rural areas use plant parts or extracts as medications for common ailments. Herbal medications are gaining popularity, even in developed countries. However, there are no qualitative or quantitative standards for most of the herbal medications. Due to this, the patients at times, suffer fatalities. We report the case of an elderly woman who consumed the tubers of Gloriosa superba as treatment for her joint pains and died of its toxicity. Colchicine is the alkaloid extract of Gloriosa superba and it is used in many rheumatological and immunological diseases.

Key Words: Gloriosa superba poisoning, Glory lilly, Colchicine toxicity

INTRODUCTION

Gloriosa superba is a semi-woody, herbaceous, branching climber which belongs to the Colchicaceae family and has common names like Flame lilly and Glory lilly [Table/Fig 1]. All parts of these plant are poisonous, especially the tubers. This plant is common in all of tropical Africa and in the Indian sub continent.

[Table/Fig 1]: *Gloriosa superba* plant with flower

The tuber is used traditionally for the treatment of joint pains, bruises and sprains, colic, chronic ulcers, haemorrhoids, cancer, impotence, nocturnal seminal emissions and leprosy and also for inducing labour pains and abortion [1], [2]. The active alkaloids which are seen in the plant are Colchicine, Gloriosine, Superbine and Salicylic acid. Colchicine, an alkaloid extract from Gloriosa, is used in many rheumatological and immunological diseases in the therapeutics of modern medicine [1], [2].

Here, we report a case of Gloriosa superba tuber consumption with its fatal outcome and post mortem correlation.

CASE REPORT

We report an interesting case of death in a 54 year old housewife, who presented from a remote village in the Western Ghats of Karnataka. She was brought to the emergency department of the hospital towards noon, with complaints of upper abdominal pain and vomiting of 12 hours duration. The previous evening, she had consumed about 300 grams of a plant tuber, for knee joint pain, as advised by a traditional practitioner. On examination, she was found to be dehydrated; her vitals were stable and she had mild distension of the abdomen with tenderness in the epigastrium. A provisional diagnosis of acute pancreatitis/ gastritis was made. A Ryle's tube was passed and she was given the injections, pantoprazole and ondansatron and IV fluids. Her haemoglobin was 12gm/dl, total count was 8700cells/dl, renal and liver function tests ECG and serum amylase levels were normal.

After admission to hospital, she continued to have vomiting. By evening, she started having bulky, bloody, watery diarrhoea and developed hypotension. She was started on broad spectrum antibiotics and the IV fluids were continued [4], [5], [6]. This time, the electrolytes showed hypokalaemia and elevated renal parameters. Her stool examination showed numerous RBCs and WBCs. Her gastrointestinal symptoms worsened and she developed gross abdominal distension and sluggish bowel sounds. A central line was placed and the fluids were continued along with intravenous potassium replacement. She became drowsy and inspite of the fluid resuscitation, she slipped into shock. Her ECG and 2D-echocardiogram were normal. She started bleeding from the gums and the puncture sites and her prothrombin time was prolonged. Her blood gases showed severe metabolic acidosis. She was provided ventilator support and supportive care was continued. She eventually died of shock and multi organ failure, after 40 hours of hospitalization.

Meanwhile, the tuber which was consumed by her was identified as that of Gloriosa superb, which contains many alkaloids, mainly colchicine. Her post mortem examination revealed inflammation and multiple punctuate haemorrhagic points on her stomach wall and intestines. Petechial haemorrhages were noticed in the epicardial surface of the heart, kidneys and the lower lobes of the lungs. There was haemorrhagic fluid in her abdomen and in her pleural and pericardial spaces.

DISCUSSION

Colchicine, the major active alkaloid of Gloriosa, is attributed for the poisoning. It has an anti-mitotic activity that arrests mitosis in metaphase. Cells with a high turnover and metabolic rate, like the intestinal epithelium, hair follicles, bone marrow cells, etc, are susceptible. The lethal dose is about 60 mg in adults and the fatal period is about 12 - 72 hrs [2].

In this case, we noticed all the described symptoms of colchicine toxicity. Usually the symptoms of colchicine toxicity develop within two to six hours after the ingestion of the tubers, which is characterized by numbness and tingling around the mouth and by burning

or rawness of the throat. The commonest clinical presentation of poisoning is severe gastroenteritis with nausea, vomiting, bloody diarrhoea leading to dehydration, hypovolaemic shock and acute renal failure [4], [5], [6]. These features were characteristically present in the present case.

The patients [2], [5], [6] may develop respiratory depression, dyspnoea, shock, hypotension, marked leucopaenia, thrombocytopaenia, coagulation disorders, oliguria, haematuria, confusion, seizures, coma and ascending polyneuropathy. Death in the severe poisoning cases occurs due to shock, metabolic derangements or respiratory failure. Alopecia and dermatitis develop about one to two weeks after poisoning.

The patient requires immediate hospitalization, followed by gastric lavage [5], [6]. There is no specific antidote which is available for the treatment. Fluid loss may lead to hypovolaemic shock, which may require fluid resuscitation and / or ionotropic support. The correction of the metabolic parameters and fluid balance are important for the management of such patients [5], [6]. Patients with respiratory depression require assisted ventilation and those with renal failure with oliguria require dialysis. Prophylactic antibiotic therapy is advisable if leucopaenia is present. If the clotting time is abnormal, vitamin K and fresh frozen plasma should be given.

In this report, we have reviewed the clinico- pathological features of gloriosa poisoning. There are no qualitative and quantitative standardisations for the native plant products which are used for common ailments. Prescribing these native preparations without the knowledge of the toxin levels of the ingredients may result in fatalities. Individuals and native practitioners should be made aware of the hazards of consuming unregulated medicines.

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AUTHORS:
1. Dr. PETER GEORGE MD

NAME OF DEPARTMENT(S) / INSTITUTION(S) TO WHICH THE WORK IS ATTRIBUTED:
Dept of Medicine, Fr Muller Medical College, Mangalore, India.

NAME, ADDRESS, TELEPHONE, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Peter George MD, Department of Medicine, Yenepoya Medical College, University Road, Mangalore, Karnataka State, India.575018.
Email: drpetergeorge2002@yahoo.com, Phone: +91 9845177660; +91 824 2204668/69/70, Fax: +91 824 2204667

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