



Case Report

Severe Ergotism in a Patient with HIV. Endovascular Treatment with Nitroglycerin

Garcias Lucas^{1*}, Da Rosa José Luis¹, Carrizo Santiago¹, Allende Norberto², Gramática Luis³

¹General surgery resident in the General Surgery Service of the Hospital National Clinics, Córdoba, Argentina.

²Head of the Vascular Surgery and Hemodynamics Service Hospital National Clinics, FCM, UNC, Córdoba, Argentina.

³Head of Service and Full Professor of the Chair of Surgical Clinic No. I Hospital National Clinics, FCM, UNC, Córdoba, Argentina.

***Corresponding author:** Garcias Lucas, General surgery resident in the General Surgery Service of the Hospital National Clinics, Córdoba, Argentina.

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Abstract

Introduction: Ergotism is a rare complication of acute intoxication or chronic intake of ergotamine derivatives, regardless of the dose [1]. The most frequent form of presentation of ergotism is peripheral arterial ischemia. Clinical picture is characterized by generalized arterial vasospasm, predominantly in the lower limbs, causing an acute vascular event.

Method: A clinical case of ergotism is presented in a 39-year-old woman, diagnosed with HIV 8 years ago, in stage B1 and treated with ritonavir 100 mg/day and atazanavir 300mg/day at Hospital Nacional de Clinics, Córdoba, Argentina.

Conclusion: There is currently no literature on the use of intra-arterial NTG. In our experience, it proved an effective and safe alternative for the treatment of ergotism associated with antiretroviral in HIV+ patients.

Keywords: Ergotism; Ergotamine; Anti-Retroviral Agents; Nitro-glycerine

Introduction

Ergotism is a rare complication of acute intoxication or chronic ingestion of ergotamine derivatives, regardless of the dose [1]. Ergotamine is frequently used for the treatment of acute and chronic migraine [2]. This is due to its ability to cause sustained vasoconstriction, especially at the brain level. Over-medication ergotism is extremely rare and requires high doses over a prolonged period. However, since the introduction of antiretroviral for the treatment of HIV, ergotism symptoms have been described related to the concomitant use of these drugs that inhibit the hepatic metabolism of ergotamine through the inhibition of cytochrome P450 [3,4]. The most common form of presentation of ergotism is peripheral arterial ischemia. Clinical picture is characterized by generalized arterial vasospasm, predominantly in the lower limbs,

causing an acute vascular event. These patients are usually referred to groups of vascular surgeons or specialists in endovascular intervention for evaluation and treatment. Among the multiple therapeutic modalities available, the administration of arterial vasodilators constitutes a central element for the treatment of these patients. A clinical case of ergotism is presented in a 39-year-old woman, diagnosed with HIV 8 years ago, in stage B1 and under treatment with ritonavir 100 mg/day and atazanavir 300mg/day at the National Hospital of Clinics, Córdoba, Argentina.

Clinical Case

A 39-year-old woman, with no history of cardiovascular disease, diagnosed with HIV 8 years ago, in stage B1 under antiretroviral treatment with ritonavir 100 mg/day, atazanavir 300mg/day. He consulted at the Peripheral Health Center for headache and the therapy received consisted of ergotamine. The patient ingested 1 500 mg ergotamine tablet per day (Migral®). Forty-eight hours after starting therapy, he presented pain in both

lower limbs with an insidious onset; accompanied by bilateral distal cyanosis, associated with decreased bilateral peripheral pulses, for which reason he required hospitalization and care in the Coronary Unit. On admission he is hemodynamically stable, cold, cyanotic lower limbs and without the presence of a popliteal, posterior tibial and foot pulse in the right lower limb, and absence of a posterior tibial and foot pulse in the left lower limb (Figure 1). Arterial Doppler ultrasound demonstrated patency of the entire arterial axis of both lower limbs with low resistance flow curves, likely related to drug-induced vasodilatation. A laboratory and chest X-ray were performed without pathological findings. Negative thrombophilia studies, in addition to cryoglobulins, cryoglobulins. Antiretroviral and ergotamine are suspended, a comprehensive parenteral hydration plan and calcium blockers (nimodipine 60 mg orally every 8 hours) associated with antithrombotic prophylaxis with enoxaparin 40 mg/day subcutaneously and antiplatelet therapy with acetylsalicylic acid (ASA) 200 mg are started. /day orally. With no significant response, angiography was performed which showed bilateral and symmetrical vasospasms causing insufficiency of the arteries in the lower extremities (Figure 2). An injection of 100 mg of prostacyclin was performed, without improvement. Intra-arterial infusion of 100 micrograms (μ g) of nitro-glycerine (NTG) was decided with immediate improvement of the vasospasm (Figure 3). The patient evolves with marked improvement in the lower limbs, recovering peripheral pulses and cyanosis immediately, presence of bedsores (Figure 4). Nosocomial discharge on the fifth day, weekly controls by outpatient clinic, lower limbs with good evolution, without signs of subsequent ischemic events (Figure 5).



Figure 1: Bilateral distal cyanosis.



Figure 2: Subtraction angiography showing evidence of distal vasospasm with a significant reduction in irrigation.

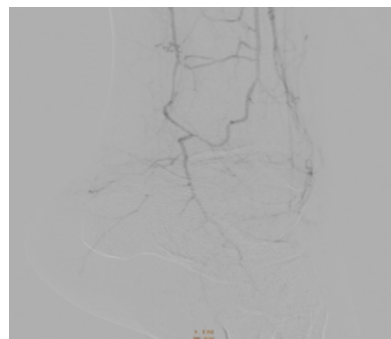


Figure 3: Subtraction angiography after intra-arterial NTG injection, showing dilation and a considerable increase in irrigation.



Figure 4: Immediate post endovascular treatment with improvement of peripheral pulses and presence of scars.



Figure 5: Mediate post-infusion of prostaglandins and NTG. B: third week post-infusion, with marked improvement of the lower limb.

Discussion

The estimated incidence of ergotism among patients who consume ergotamine preparations is 0.01% (0.5/100,000 inhabitants/year [5]. Ergotamine is the most widely used drug for self-medication in migraine-type headaches, favoured for its low cost and over-the-counter sale, despite its multiple side effects, especially in patients on antiretroviral treatment. Faced with the

clinical diagnosis, first, ergotamine intake should be stopped immediately and then the administration of vasodilators should be started, together with other supportive measures such as adequate intravascular volume management with fluids. In recent reports, the administration of prostaglandins E1 and prostacyclin I2 has been evaluated, with encouraging results through the endovascular route [6]. In our experience, we have not had a favourable response to prostaglandin infusion, which is why during the procedure it was decided to administer 100 µg NTG endovascular, with an immediate response. Of note, clinical response is seen even when areas of moderate spasm persist on angiography. We believe that the infusion should be stopped when the symptoms revert, regardless of the angiographic picture, since in this way prolonged infusions and possible complications would be avoided [7].

Conclusion

NTG infusion is routinely used in diagnostic studies, but it induces submaximal vasodilation, so it is not specifically used together with pressure guides. Doses greater than 200 µg can cause hypotension and decrease coronary flow. Currently, there is no literature on the therapeutic use of intra-arterial GTN for severe ergotism. In our experience, it proved an effective and safe alternative for the treatment of ergotism associated with antiretroviral in HIV+ patients.

Conflict of Interests

The authors declare that they have no commercial, financial, or proprietary interest in any of the products, procedures, or companies described in this article.

Key Concepts

The approach discussed in this article, referring to this infrequent pathology, suggests that the appropriate therapeutic management in the event of medical treatment failure should be hemodynamic under cardiac monitoring of the patient. The literature

offers excellent results with the intra-arterial administration of prostaglandins, which, in our series, the result was not positive. That is why nitro-glycerine was infused endovascular, with an immediate response to vasospasm, offering an effective and safe alternative for the patient.

Disclosure

Ergotism is a rare complication of acute poisoning or chronic ingestion of ergot derivatives, regardless of dose. Therefore, to date, there are no standardized bases for its management. We present the clinical case of a patient with HIV on antiretroviral treatment who, after taking ergotamine, presented a picture of peripheral ischemia, with an excellent response to treatment with intra-arterial nitro-glycerine.

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