DESENSITISATION PROTOCOL FOR LIPOSOMAL AMPHOTHERICIN B: A CASE REPORT

4CPS-027 ATC code: 2. Case studies - with patient consent

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BACKGROUND AND IMPORTANCE

- Liposomal amphotericin B (ANBL) is an effective and safe treatment, however non-IgE-mediated hypersensitivity reactions have been described.

AIM AND OBJECTIVES

To describe the ANBL desensitisation protocol in a patient with leishmaniasis who developed a demonstrated hypersensitivity reaction to the drug.

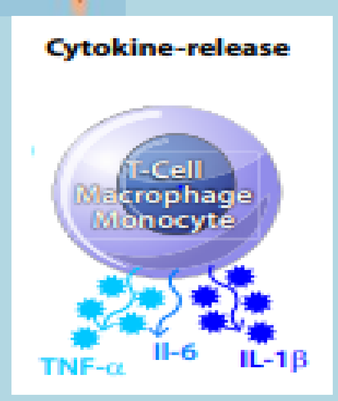
MATERIAL AND METHODS

- 16-year-old male, 85kg, with severe corticodependent eosinophilic asthma, is admitted for prolonged fever, cholestatic hepatitis, splenomegaly, and thrombocytopenia. Visceral leishmaniasis was diagnosed and ANBL treatment was started at 3mg/kg IV to be administered in 2 hours.

- During the perfusion he presented back pain and headache, which subsided when it was interrupted. Later, it restarted at a slower rate, however, he developed:
  - Erythematous plaques
  - Discomfort
  - Tachycardia
  - Fever

For which it was stopped.

- The ANBL prick test was negative. It has been described that in non-IgE reactions there is a release of cytokines that trigger the symptoms.



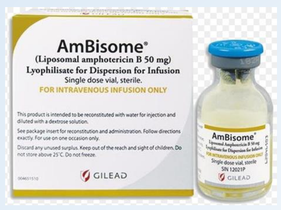
- **Desensitisation to the antigen** produced by the initial cytokine cascade **is possible**.

- Second-line alternatives for leishmaniasis were not considered adequate, so it was decided to restart ANBL with a desensitisation protocol, which consists of administering the drug in 3-step, progressively increasing the infusion rate and concentration until reaching administration of the full dose.

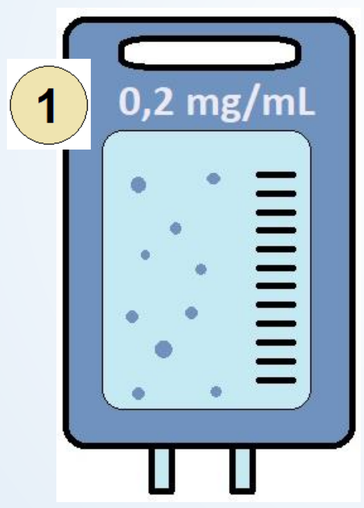
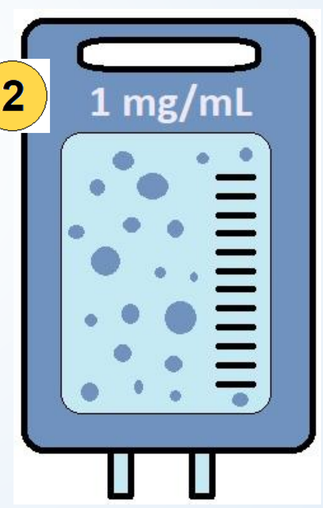
- Low initial doses of antigen produce progressive depletion of activating signals and inhibition of mediator release, thus reducing clinical reactivity.

RESULTS

- In our case desensitisation consisted in only 2-step because there are no stability data for a more dilute preparation (1/100) of ANBL in 5% glucose serum.
- First dilution was administered in 5 perfusion rhythms given good tolerance, the speed was progressively increased every 15 minutes
- Subsequently, the full dose of ANBL was administered in 4 rhythms maintained the last until the full dose was reached.



Desensitisation in two-step:

1/10 DILUTION ANBL + SG5% (25mg/125ml)	FULL DOSE ANBL + SG5% (250mg/250ml)
	
5 perfusion rhythms increased every 15 minutes	4 perfusion rhythms increased every 15 minutes

RATE (mL/h)	RATE (mL/h)
2,5 x 15 min	10 x 15 min
5 x 15 min	20 x 15 min
10 x 15 min	40 x 15 min
20 x 15 min	60 x 3,875 h
40 x 15 min	

☆ **Premedication with paracetamol IV plus dexchlorpheniramine IV was necessary**

CONCLUSIONS AND RELEVANCE:

- The use of an ANBL desensitisation protocol has proven to be a safe option, which has allowed the administration of treatment without the appearance of adverse effects.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1) Prieto Tato, L., La Orden Izquierdo, E., Guillén Martín, S., Salcedo Lobato, E., García Esteban, C., García-Bermejo, I., & Ramos Amador, J. (2010). Diagnóstico y tratamiento de la leishmaniasis visceral infantil. Anales de Pediatría, 72(5), 347–351.
2) Vultaggio, A., Matucci, A., Nencini, F., Bormioli, S., Vivarelli, E., & Maggi, E. (2020). Mechanisms of Drug Desensitization: Not Only Mast Cells. Frontiers in Pharmacology.
3) Castells, M. (2017). Diagnosis and management of anaphylaxis in precision medicine.Journal of Allergy and Clinical Immunology, 140(2), 321-333.