

## Images in Infectious Diseases

# Jarisch-Herxheimer reaction in a patient with syphilis and human immunodeficiency virus infection

**Aurean D'Eça Júnior<sup>[1]</sup>, Lívia dos Santos Rodrigues<sup>[2]</sup>  
and Luciana Cavalcante Costa<sup>[3]</sup>**

[1]. Departamento de Enfermagem, Universidade Federal do Maranhão, São Luís, MA, Brasil.

[2]. Curso de Medicina Campus Pinheiro, Universidade Federal do Maranhão, São Luís, MA, Brasil.

[3]. Programa de Pós-Graduação *Stricto Sensu* em Ciências da Saúde, Universidade Federal do Maranhão, São Luís, MA, Brasil.



**FIGURE A:** Multiple erythematous plaques on the abdomen 5 hours after receiving the first intramuscular penicillin dose.

A 29-year-old HIV-infected Brazilian man presented syphilis symptoms; infection was detected using Venereal Disease Research Laboratory (VDRL) reagent (1:512). Penicillin 7,200,000 IU (intramuscular) was prescribed as 3 weekly doses of 2,400,000 IU.

Five hours after receiving the first intramuscular penicillin dose, he developed a fever (39.3°C), chills, sweating, headache, and worsening of lesions that manifested as multiple erythematous plaques (**Figures A, B**). Based on these, he was diagnosed with Jarisch-Herxheimer reaction (JHR). Clinical symptoms disappeared after 24 hours; the lesions regressed within 48 hours (**Figure C**).



**FIGURE B:** Multiple erythematous plaques on the arm 5 hours after receiving the first intramuscular penicillin dose.



**FIGURE C:** Regression of lesions within 48 hours.

**Corresponding author:** Dr. Aurean D'Eça Júnior.

**e-mail:** aureandjr@yahoo.com.br

**Received** 25 October 2017

**Accepted** 20 April 2018



Jarisch-Herxheimer reaction a febrile inflammatory reaction, frequently occurs after the first chemotherapy dose during spirochetal disease treatment<sup>1</sup>. Its clinical manifestations include fever, sweating, headache, hypotension, and worsening of cutaneous lesions. Many aspects of its etiology are still unknown. It is theorized that spirochete destruction after anti-treponemal treatment could activate a cytokine cascade and release lipoproteins. Penicillin treatment inhibits bacterial cell wall synthesis and makes spirochetes more susceptible to phagocytosis, which then stimulates cytokine release, including tumor necrosis factor and interleukins 6 and 8<sup>2</sup>.

Knowledge about JHR in health professionals is indispensable for differential diagnosis, since JHR may be mistaken for penicillin hypersensitivity<sup>3</sup>.

#### Acknowledgments

We offer our gratitude to the academic institutions that provided technical

support for the development and implementation of this report.

#### Conflict of interest

The authors declare that there is no conflict of interest.

---

### REFERENCES

1. Tsai MS, Yang CJ, Lee NY, Hsieh SM, Lin YH, Sun HY, et al. Jarisch Herxheimer reaction among HIV positive patients with early syphilis: azithromycin versus benzathine penicillin G therapy. *J Internat AIDS Society*. 2014;17(1):1-8.
2. See S, Scott EK, Levin MW. Penicillin induced Jarisch Herxheimer reaction. *Ann Pharmacother*. 2005 Dec;39(12):2128-30.
3. Grossi R, Barros AC, Andrade R, Galvao C, Reis H, Ferreira DC, et al. Jarisch Herxheimer reaction in pregnant woman with syphilis: case report. *J Bras Doencas Sex Transm*. 2011;23(3):149-51.