

## **Skin hyperpigmentation associated with melanocyte activation and inflammatory process following intravenous polymyxin B treatment**

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Polymyxins were widely used until the 1960s; however, they fell into disfavor owing to their toxicity. The subsequent growth of infections caused by multidrug resistant Gram-negative bacteria led to renewed use of this class of antimicrobials in clinical practice, owing to their low rate of bacterial resistance. Acquired skin hyperpigmentation following intravenous polymyxin B treatment has been previously reported, but little is known about its pathogenesis, clinical course, and treatment. We studied the clinical, dermatoscopic, histologic, and immunohistochemical skin properties of three patients who presented with this disorder. We concluded that hyperpigmentation due to intravenous polymyxin B treatment is associated with an inflammatory process and subsequent melanocyte activation. Since polymyxin

B causes the release of histamine, which is known for its melanogenic effect, it is possible that skin darkening is associated with this inflammatory mediator. Histologic and immunohistochemical findings showed an abundant melanocyte-pigmented dendritic network. Langerhans cells hyperplasia and dermal IL-6 overexpression were also found, presumably for an inflammatory process due to polymyxin B use. IL-6 could act as a proinflammatory factor and an inhibitor of exacerbated melanogenesis, as previously described. These clinical and dermatoscopic findings contributed to a better understanding of how the pigmentary reaction manifests. Although the pigmentary disorder neither influence the outcome of the therapy nor warrant discontinuation of treatment, it nevertheless considerably affects the patient's quality of life

### **Biography**

Patricia Moriel is a Full Professor in the Faculty of Pharmaceutical Science at State University of Campinas (UNICAMP), Brazil. She is a Leader of the Clinical Pharmacy Group that is involved in the study of pharmacotherapy, drug adverse events, pharmacovigilance, pharmacokinetic, pharmacogenomics influences in adverse events, especially in cancer. She has authored more than 45 research articles, awards, conferences and the granting of a research projects. She has been the director of several works of Master in Medical and Pharmaceutical Science and Doctoral theses.

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