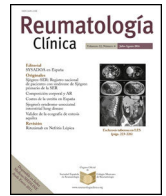




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## Images in Clinical Rheumatology

### Eosinophilic granulomatosis with polyangiitis: Successful treatment with methotrexate and low-dose of mepolizumab

### Tratamiento exitoso de la granulomatosis eosinofílica con poliangeítis con metotrexato y dosis bajas de mepolizumab

Luis Francisco Valdés-Corona,<sup>a</sup> Patricia Aguilar-Dominguez,<sup>b</sup> Ariel Jasqui-Bucay,<sup>c</sup> Mariana Arroyo-Machiavello<sup>c,\*</sup>

<sup>a</sup> Departamento de Reumatología, Hospital Angeles Lomas, Huixquilucan, Estado de México, Mexico

<sup>b</sup> Departamento de Neumología, Hospital Angeles Lomas, Huixquilucan, Estado de México, Mexico

<sup>c</sup> Departamento de Medicina Interna, Hospital Angeles Lomas, Huixquilucan, Estado de México, Mexico

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Eighteen-year-old female patient with a history of refractory asthma, recurring sinusitis, and interstitial lung disease diagnosed in February 2021, whose current illness debuted in January 2022 with cough, wheezing, and dyspnoea. The initial physical examination revealed bilateral rales, localised dermatosis on the back of both hands characterised by pruritic erythematous-violaceous macules, which did not whiten when pressed. Laboratory tests on admission revealed  $15.4 \times 10^9/l$  leukocytes, with 45% eosinophilia, and elevated acute phase reactants (CRP and ESR). Paranasal sinus tomography displayed paranasal hypertrophy, chronic sinusitis. Chest CT scan without contrast evinces multilobar ground-glass images involving more than 50% of the pulmonary parenchyma. Bronchoscopy was performed; infectious causes were ruled out, and predominantly eosinophilic inflammatory cells were demonstrated. Nasal biopsy confirmed eosinophilic inflammatory infiltrate without granulomas. Histopathological studies against neutrophilic cytoplasm were negative. Eosinophilic granulomatosis with polyangiitis was diagnosed and treatment with high-dose glucocorticoids was initiated and the pulmonary and skin lesions improved. The patient was discharged with treatment based on gradual reduction of glucocorticoids (described in the PEXIVAS protocol), methotrexate 15 mg per week and mepolizumab 100 mg subcutaneous monthly. After 24 months of treatment, all symptoms have remitted and biochemical control revealed less than 1% eosinophils, normalised acute phase reactants, and a



**Fig. 1.** Coronal computed tomography of the chest with evidence of multilobar ground-glass images affecting more than 50% of the pulmonary parenchyma.

*Birmingham Vasculitis Activity Score* (BVAS) of 0. The patient has displayed no adverse effect during the course of treatment.

Eosinophilic granulomatosis with polyangiitis (EGPA) is an uncommon immunomediated disease. The main characteristics are

\* Corresponding author.

E-mail address: [marianamachiavello@hotmail.com](mailto:marianamachiavello@hotmail.com) (M. Arroyo-Machiavello).



**Fig. 2.** Computed tomography scan of the paranasal sinuses with evidence of paranasal hypertrophy and chronic sinusitis.

late onset asthma, peripheral and tissue eosinophilia.<sup>1</sup> The diagnostic gold standard is biopsy with evidence of eosinophilic infiltrate and fibrosing necrosis. Glucocorticoides are the cornerstone of treatment.<sup>2</sup> However, biological treatments, such as mepolizumab, a humanised monoclonal antibody against the IL-5 receptor, has proven to be an effective treatment for EGPA.<sup>3</sup> Classification criteria recently updated uphold the diagnosis in this case and avoid delay in treatment.<sup>1</sup> Despite the fact that the recommended dose of mepolizumab is usually 300 mg per month, it is an expensive drug.<sup>4</sup> This is why we originally opted to use methotrexate, prednisone, and low-dose mepolizumab in this case, which yielded a favourable outcome.<sup>4,5</sup> (Figs. 1 and 2).

## CRediT authorship contribution statement

All individuals designated as authors have participated in the work and have taken public responsibility for its content.

## Ethical considerations

Written informed consent was obtained from the patient for the use of the image and the publication of the details of her case.

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## Declaration of competing interest

The authors have no conflict of interests to declare.

## References

- White J. Eosinophilic granulomatosis with polyangiitis: a review. *Autoimmun Rev.* 2023;22:103219, <http://dx.doi.org/10.1016/j.autrev.2022.103219> [Accessed 2 Feb 2024].
- Walsh M. Plasma exchange and glucocorticoids in severe ANCA-associated vasculitis. *N Engl J Med.* 2020;382:622–31, <http://dx.doi.org/10.1056/NEJMoa1803537> [Accessed 2 Feb 2024].
- Detoraki A. Real-life evidence of low-dose mepolizumab efficacy in EGPA: a case series. *Respir Res.* 2021;22:185, <http://dx.doi.org/10.1186/s12931-021-01775-z> [Accessed 2 Feb 2024].
- Bettiol A. Mepolizumab for eosinophilic granulomatosis with polyangiitis: a European Multicenter Observational Study. *Arthritis Rheumatol.* 2022;74:295–306, <http://dx.doi.org/10.1002/art.41943> [Accessed 2 Feb 2024].
- Vultaggio A. Low-dose mepolizumab effectiveness in patients suffering from eosinophilic granulomatosis with polyangiitis. *Allergy Asthma Immunol Res.* 2020;12:885–93, <http://dx.doi.org/10.4168/aaair.2020.12.5.885> [Accessed 2 Feb 2024].