

# Efficacy of dupilumab as an alternative to corticosteroids in the treatment of exacerbations of allergic bronchopulmonary aspergillosis

Masamitsu Hamakawa  | Tadashi Ishida

Department of Respiratory Medicine, Kurashiki Central Hospital, Okayama, Japan

## Correspondence

Masamitsu Hamakawa, Department of Respiratory Medicine, Kurashiki Central Hospital, 1-1-1 Miwa, Kurashiki, Okayama 710-8602, Japan.  
Email: [mh16976@kchnet.or.jp](mailto:mh16976@kchnet.or.jp)

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## Key message

The pathogenesis of allergic bronchopulmonary aspergillosis involves not only eosinophils but also plasma cells that produce immunoglobulin E. Dupilumab may be an effective alternative to corticosteroids because it inhibits T cell to plasma cell differentiation by blocking IL4.

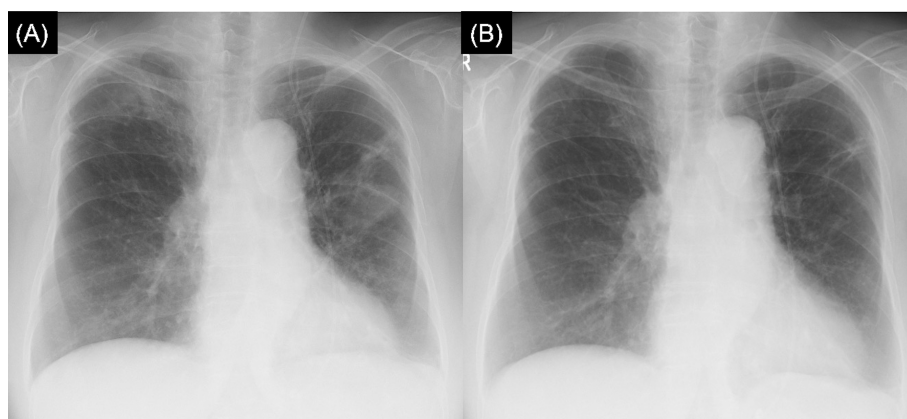
## KEYWORDS

ABPA, allergic bronchopulmonary aspergillosis, asthma, dupilumab

## CLINICAL IMAGE

An 83-year-old woman was treated with corticosteroids for repeated exacerbations of severe asthma and allergic bronchopulmonary aspergillosis (ABPA) based on the diagnostic criteria proposed by the ISHAM Working Group.<sup>1</sup> Benralizumab was started as an alternative to the frequent use of corticosteroids, which had worsened

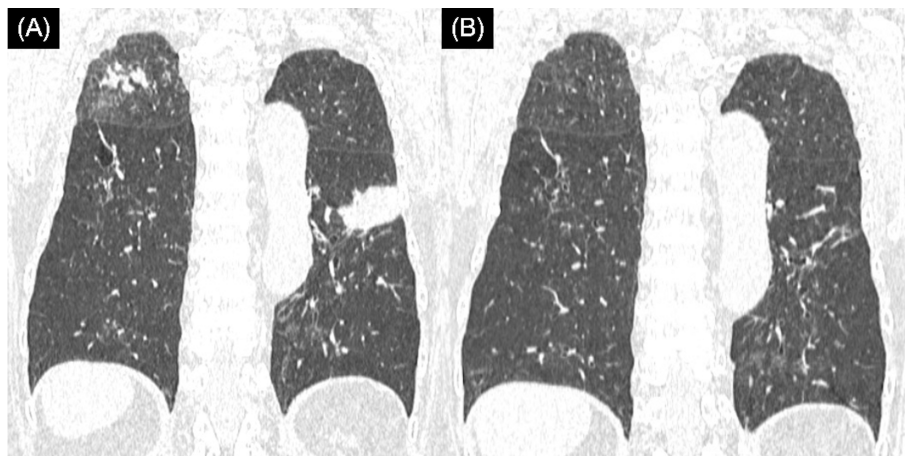
her pre-existing osteoporosis and diabetes. However, 3 months later, she presented with the chief complaint of wet cough. Chest imaging showed abnormal shadows (Figures 1A and 2A). Blood tests revealed a peripheral blood eosinophil count of 0/ $\mu$ L. Her immunoglobulin E level had previously been within the normal range but immunological tests at this presentation revealed an elevation to 1308 IU/mL (normal level, <361 IU/mL).



**FIGURE 1** Chest radiographs. (A) Infiltration shadows are seen in the right upper and left middle lung fields during exacerbation of allergic bronchopulmonary aspergillosis. (B) The infiltration shadows are reduced after 2 weeks of treatment with dupilumab.

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**FIGURE 2** Computed tomography (CT) of the chest. (A) Wedge-shaped infiltration shadows and clusters of nodules are apparent during exacerbation of allergic bronchopulmonary aspergillosis. (B) The infiltrating shadows and clusters of nodules are much less prominent after 6 weeks of treatment with dupilumab.

These features indicated a diagnosis of relapsed ABPA. To avoid adverse events, we did not use corticosteroids at this presentation, and made only one change, of benralizumab to dupilumab. After the second week of treatment, her symptoms and chest imaging findings improved (Figures 1B and 2B). The pathogenesis of ABPA involves not only eosinophils but also plasma cells that produce IgE, which is responsible for type I allergic mechanisms.<sup>2</sup> Dupilumab may be an effective alternative to corticosteroids because it inhibits T cell to plasma cell differentiation by blocking IL4.<sup>3</sup>

#### AUTHOR CONTRIBUTIONS

MH wrote the manuscript. MH and TI contributed to the data collection. All authors read and approved the final manuscript.

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#### CONFLICT OF INTEREST STATEMENT

None declared.

#### DATA AVAILABILITY STATEMENT

Research data are not shared.

#### ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained from the patient for the publication of this manuscript and accompanying images.

#### ORCID

Masamitsu Hamakawa  <https://orcid.org/0009-0002-4635-4034>

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