Letter to the Editor

Eur J Breast Health
DOI: 10.4274/ejbh.galenos.2025.2025-4-6

Aromatase Inhibitor-Related Alveolar Hemorrhage or ANCA-Associated Vasculitis?

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Cite this article as: Büyükavcı R. Aromatase inhibitor-related alveolar hemorrhage or ANCA-associated vasculitis? Eur J Breast Health. [Epub Ahead of Print]

Dear Editor,

A 64-year-old woman who had undergone a mastectomy for left breast cancer three years earlier and had been treated with aromatase inhibitors (AIs) (anastrozole 1 mg/day) postoperatively. Two years after treatment, she presented with diffuse arthralgia and myalgia persisting for three months, followed by increasing dyspnea and massive hemoptysis. Computed tomography (CT) showed bilateral reticular formation, ground-glass shadows, and diffuse hemorrhage areas in the lung fields (Figure 1). A differential diagnosis was made for alveolar hemorrhage syndromes (AHS), and no finding suggesting vasculitis was found. With this presumed drug-induced pathology, the relevant treatment was discontinued, and corticosteroid treatment was started. A rapid clinical response and laboratory and radiologic improvements were evident. However, during a routine follow-up, areas of alveolar hemorrhage and a ground glass appearance were observed again on the thoracic CT. Anti-proteinase 3 anti-neutrophil cytoplasmic antibodies (PR3 ANCA) sent one year later was positive. The patient was diagnosed with ANCA-associated vasculitis six months prior to the time of writing, and steroid+rituximab treatment was started. Radiologic improvement was observed on CT, and PR3 ANCA became negative (Figure 2). AI treatment was continued with letrozole 2.5 mg/day. Among the side effects of AIs, drug-induced AHS should be kept in mind, but the patient should be closely monitored for other primary diagnoses. The patient is still under follow-up.

AIs are recognized as the first-line treatment for the long-term treatment of breast cancer in postmenopausal women (1). Adverse effects frequently encountered during treatment with AIs include generalized arthralgia and myalgia, bone loss, and effects on the cardiovascular system and blood lipids (2, 3). In patients with breast cancer, inflammatory rheumatic diseases related to both the drugs used and the disease itself are relatively common (3). AHS refer to all the clinical-pathologic disorders resulting from bleeding into the alveolar space due to alveolar capillary basement membrane damage. Bleeding into the alveolar space can occur in the setting of medications, infections, autoimmune rheumatologic diseases, vasculitis, or idiopathically. Alveolar hemorrhage is alarming for both the patient and their healthcare provider, especially when it leads to hemoptysis. Hemoptysis may be minimal or may present with different clinical conditions ranging from life-threatening to massive hemoptysis. Therefore, rapid diagnosis and treatment are required. AHS should be considered in the presence of hemoptysis, anemia, and bilateral/unilateral infiltration on chest radiography (4). Among the side effects of AIs, of the vasculitides cutaneous vasculitis and Henoch-Schonlein purpura were the most commonly reported in the literature. Vasculitis is the most common adverse skin event reported for both tamoxifen and AIs (5). However, to the best of our knowledge there is no published report of AI-associated medium/large vessel vasculitis.

Systemic evaluation, detailed laboratory tests and radiological imaging are invaluable in patients with AHS. Since the patient had a history of malignancy and AI use and there were no findings supporting a rheumatologic diagnosis, primary drug-induced vasculitis was considered the most likely cause. AI treatment was interrupted.

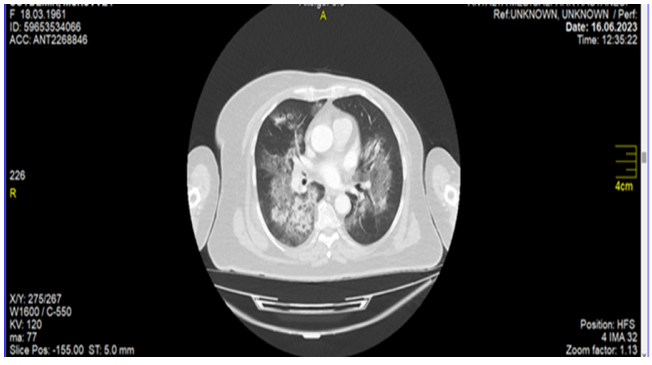

Figure 1. Thorax computed tomography with bilateral alveolar hemorrhage

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Received: 14.04.2025
Accepted: 18.04.2025
Epub: 20.05.2025

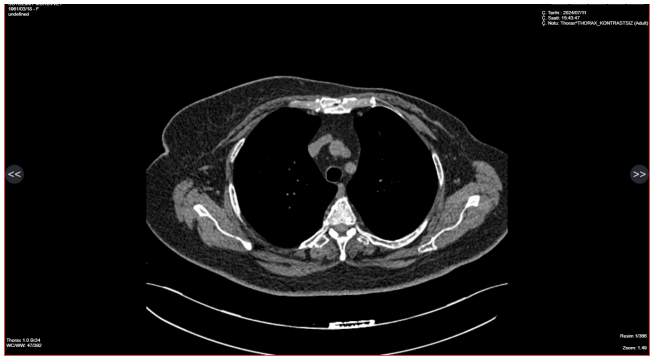

Figure 2. Thorax computed tomography after treatment

As a result of alveolar microhemorrhages that developed later and ANCA positivity, the patient was diagnosed as ANCA-associated vasculitis and appropriate treatment was initiated while AIs were restarted.

Footnotes

Conflict of Interest: No conflict of interest was declared by the author.

Financial Disclosure: The author declare that they received no financial support for this study.

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