Paraneoplastic Eosinophilia: An Unusual Initial Presentation of Metastatic Pancreatic Adenocarcinoma

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Introduction

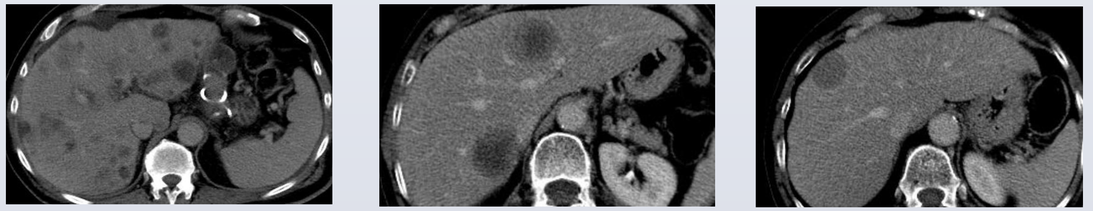
- Paraneoplastic eosinophilia is mainly associated with hematologic malignancies.
- It has been reported in solid tumors through case reports.
- Among solid tumors, it was mainly described in melanoma and lung, renal, and thyroid carcinomas.

Case Report

- A 58-year-old female patient, previously healthy, heavy smoker, presented with worsening abdominal pain and dyspnea.
- Laboratory tests revealed hypereosinophilia with an absolute eosinophilic count (AEC) of 65,000/mm^3, thrombocytosis (platelets=890,000/mm^3), and disturbed liver function tests.
- Chest–abdomen–pelvis CT scan showed a huge necrotic tumor in the tail of the pancreas associated with multiple regional and retroperitoneal lymph nodes, liver metastases, and multiple bilateral lung nodules with lymphangitic carcinomatosis.

Diagnosis

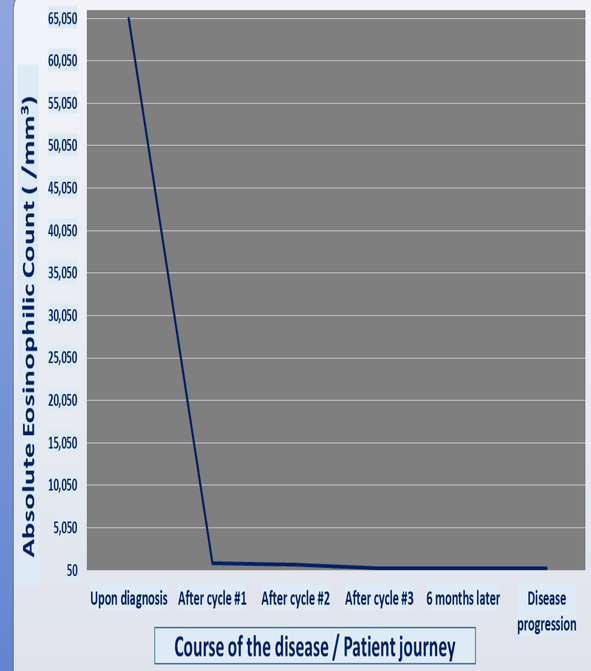
- The following laboratory tests were performed to exclude different etiologies of eosinophilia: infectious diseases (mainly parasitic infections), connective tissue diseases, autoimmune disorders, and allergic causes.
- Bone marrow aspirate and biopsy did not show any evidence of bone marrow metastasis, and there was no leukemia nor myelo/lymphoproliferative disorder. Fluorescent *in-situ* hybridization did not detect a *FIP1L1-PDGFRα* fusion.
- After getting clearance from the infectious disease team (excluding any parasitic infection), a CT-guided liver biopsy was done and revealed the presence of adenocarcinoma cells compatible with primary pancreatic carcinoma. The patient was on oxygen and was started on dexamethasone.



Abdomen CT scan showing the multiple secondary liver deposits, some of which are with central necrosis

Treatment and patient journey

- First-line chemotherapy for advanced pancreatic adenocarcinoma with gemcitabine and nab-paclitaxel was initiated.
- After the first cycle, the patient was off oxygen with near resolution of the hypereosinophilia (AEC=900/mm^3). She received 8 cycles of gemcitabine and nab-paclitaxel.
- Then, she progressed with worsening lymph node metastases but without any re-increase in AEC. She was treated with second line mFOLFIRINOX for 12 cycles. Thereafter, she progressed with peritoneal carcinomatosis and liver metastases. Her condition deteriorated until she passed away.



Conclusion

- Paraneoplastic eosinophilia has been rarely reported in advanced pancreatic adenocarcinoma.
- It is characterized by a more aggressive disease and dismal outcome.
- Clinicians must be aware of this condition and must exclude all other causes of hypereosinophilia before making this diagnosis.

References

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