# Absolute Eosinophilia - A Practical Approach

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**Julie McDowell:**

Absolute Eosinophilia: A Practical Approach, is the latest activity from the CAP's Clinical Pathology Improvement Program, also known as CPIP. "This activity describes a pragmatic approach for the workup of eosinophilia, including the appropriate application of molecular genetic study," explains one of the CPIP case authors, Dr. Vandita Johari, in this CAPcast interview. Dr. Johari, what inspired you to address the topic of eosinophilia in this CPIP case?

**Dr. Vandita Johari:**

In the early years of my training, I was assigned to a hospital in India in a very tropical location. Infections with parasites were so common that virtually every patient I saw had absolute eosinophilia, and I reflexively ascribed that to a parasitic infection. It was not until I moved to the United States and trained in hematopathology that I realized that absolute eosinophilia was triggered by a vast variety of diseases and it could be difficult for providers to nail down a precise cause. My personal challenge through some very difficult cases of absolute eosinophilia inspired me to address this topic.

**Julie McDowell:**

As you mentioned, understanding the differential diagnosis of absolute eosinophilia can be tricky. What creates these difficulties?

**Dr. Vandita Johari:**

The different entities that fall into a variety of different buckets that can all cause eosinophilia and the broad categories would be infections due to parasites in particular, autoimmune diseases, allergic reactions and malignancies. In malignancies, the eosinophil itself can be a part of the malignant clone, and this is called clonal eosinophilia, or it could be reactive to an underlying malignancy. So all of these situations need an understanding of the pathophysiology of the disease process and that's what can create difficulty. The other challenge is that neoplastic eosinophils look similar to a normal reactive eosinophils, and that's the other challenge associated with understanding the differential diagnosis.

**Julie McDowell:**

Can you comment on the types of conditions associated with eosinophilia?

**Dr. Vandita Johari:**

Eosinophilia is associated with infections, particularly parasitic diseases, autoimmune diseases, allergies, malignancies like certain solid tumors like lung tumors and Hodgkin's disease, and hematolymphoid neoplasms. The WHO actually has assigned eosinophilia its own category and its classification, and this category is called myeloid/lymphoid neoplasms associated with eosinophilia. This category is one of the most difficult categories to understand in the WHO classification, and this entity is also addressed in some depth in our CPIP.

**Julie McDowell:**

You mentioned some of the types of conditions associated with eosinophilia. Is there anything else you can add?

**Dr. Vandita Johari:**

These neoplasms are quite rare and they work up because, as I previously mentioned, there are few morphological cues that will help us distinguish clonal from reactive eosinophilia. We have to rely heavily on a molecular and cytogenetic workup to subdivide the various entities included in this category, and that's what makes the workup unique. The other thing I'd like to point out is that clinically these entities can be associated with pretty distressing symptoms like shortness of breath, cardiac issues, besides the commonly known skin reactions and itching. And it's really important to get to the diagnosis because we have patients that might be very sick and symptomatic from these conditions.

**Julie McDowell:**

Finally, Dr. Johari, do you have any parting thoughts you'd like to share related to absolute eosinophilia?

**Dr. Vandita Johari:**

Our CPIP simplifies the complex journey of the differential diagnosis of absolute eosinophilia, includes a fascinating case involving a reactive cause, and then takes a deep dive into the WHO category of myeloid/lymphoid neoplasms associated with eosinophilia. It ends with a practical algorithm that the learner can use as a cheat sheet to navigate the complicated molecular and genetic workup of the case. So I think our CPIP is a really useful tool to help you through this complicated area.

**Julie McDowell:**

Thank you, Dr. Johari. As Dr. Johari just mentioned, she is one of the authors of a new CPIP activity entitled Absolute Eosinophilia: A Practical Approach. To Learn more, please visit estore.cap.org and search for CPIP and Absolute Eosinophilia.

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