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Research Article

Evaluation of Prevalence and Clinical Symptoms in Patients with Eosinophilia Using Peripheral Smear Method: A Retrospective Study

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ABSTRACT
Background: Eosinophilia is a common hematological abnormality associated with diverse clinical conditions, including allergic disorders, parasitic infections, and hematological malignancies. The peripheral smear method remains an essential tool for initial evaluation, allowing morphological assessment of eosinophils and concurrent hematological abnormalities. This retrospective study aimed to evaluate the prevalence, demographic patterns, and clinical symptoms in patients with eosinophilia diagnosed based on peripheral smear examination.
Methods: A retrospective observational study was conducted including 80 patients with peripheral blood eosinophilia (absolute eosinophil count >500 cells/μL) diagnosed in February 2026. Demographic data, clinical presentations, and peripheral smear findings were analyzed. Eosinophilia severity was classified as mild (500-1500/μL), moderate (1500-5000/μL), and severe (>5000/μL). Statistical analysis was performed using SPSS version 26.
Results: Among 80 patients, 56.3% (n=45) were males and 43.7% (n=35) were females (male:female ratio 1.3:1). The mean age was 38.6 ± 16.4 years (range 5-78 years). The majority of patients (26.3%) belonged to the 21-30 years age group. Mild eosinophilia was most prevalent (47.5%), followed by moderate (36.2%) and severe (16.3%). The most common clinical symptoms were fever (41.3%), cough (37.5%), and skin manifestations including rash and pruritus (33.8%). Peripheral smear examination revealed toxic granules in eosinophils among 28.8% of patients, predominantly in those with moderate-to-severe eosinophilia. Concurrent anemia (hemoglobin <12 g/dL) was observed in 51.3% of patients.
Conclusion: Eosinophilia affects predominantly young adults with a slight male predilection. Fever and respiratory symptoms are the commonest presenting complaints. Peripheral smear examination provides valuable morphological information and should complement absolute eosinophil count in initial evaluation. The high prevalence of concurrent anemia warrants comprehensive hematological assessment in these patients.

Keywords: Eosinophilia, Peripheral Smear, Absolute Eosinophil Count, Clinical Symptoms, Prevalence, Retrospective Study.

INTRODUCTION
Eosinophils are granulocytic white blood cells that play a crucial role in immune modulation, particularly in defense against parasitic infections and in allergic reactions. These cells are characterized by the presence of cytoplasmic granules containing major basic protein, eosinophil-derived neurotoxin, cationic protein, and eosinophil peroxidase, which stain readily with eosin dye[1]. Produced in the bone marrow under the influence of transcription factors including PU.1 and GATA-1, eosinophil differentiation and survival are primarily regulated by interleukin-5 (IL-5), along with IL-3 and granulocyte-macrophage colony-stimulating factor (GM-CSF).[2]

Peripheral blood eosinophilia is defined as an absolute eosinophil count (AEC) exceeding 500 cells per microliter of blood. The condition is classified into three severity grades: mild (500-1500/μL), moderate (1500-5000/μL), and severe (>5000/μL).[3] Hypereosinophilia, defined as AEC greater than 1500/μL documented on at least two occasions with a minimum interval of four weeks, may be associated with end-organ damage, constituting hypereosinophilic syndrome.[4]

The epidemiological profile of eosinophilia varies considerably across geographical regions and clinical settings. In developed countries, the prevalence ranges from 0.1% to 0.3% in the general population, while in tropical regions

with endemic parasitic infections, rates are substantially higher.[5] A large retrospective study from Thailand reported a prevalence of 9.6% among patients undergoing periodic health examinations.[6] In hospital-based settings from Eastern India, eosinophilia remains an under-recognized public health problem with significant morbidity.[7]

Eosinophilia may be primary (clonal proliferation associated with hematological disorders), secondary (reactive to non-hematological conditions), or idiopathic when no cause is identified. Secondary causes predominate globally, with allergic disorders (respiratory and dermatologic) being most common in developed nations, while parasitic infections remain the leading cause in tropical developing countries.[3,8]

The clinical manifestations of eosinophilia are highly variable, ranging from asymptomatic presentations to severe, life-threatening organ dysfunction. Mild eosinophilia itself typically does not produce symptoms, but persistent elevation exceeding 1500/μL may cause tissue inflammation and damage through cytokine-mediated mechanisms and eosinophilic infiltration of organs.[9] The heart, lungs, skin, gastrointestinal tract, and nervous system are most frequently affected.[4] Common presenting symptoms include fever, cough, dyspnea, skin rashes, pruritus, abdominal pain, and constitutional symptoms.[8]

The peripheral smear method remains an indispensable tool in the initial evaluation of eosinophilia. Beyond confirming the automated eosinophil count, peripheral smear examination allows morphological assessment of eosinophils for abnormalities in granulation, nuclear segmentation, or size, which may indicate neoplastic processes.[10] It also provides crucial information about other cell lines, helping identify concurrent anemia, thrombocytopenia, or abnormal cells that might suggest underlying hematological disorders.[10,11]

Despite the clinical significance of eosinophilia, there is limited published data from developing countries regarding its prevalence, clinical spectrum, and peripheral smear characteristics. This retrospective study was therefore undertaken to evaluate the prevalence, demographic patterns, and clinical symptoms in patients with eosinophilia diagnosed using the peripheral smear method.

Methodology

Research Design, Setting and Pfopulation

This study employed a retrospective observational research design. The study was conducted in the Department of Hematology at a tertiary care teaching hospital located in an urban setting. The target population for this study comprised all patients presenting to the tertiary care hospital with peripheral blood eosinophilia, defined as an absolute eosinophil count exceeding 500 cells per microliter of blood.

Inclusion Criteria

1. Patients of all ages (pediatric, adult, and geriatric populations) of either gender
2. Presence of peripheral blood eosinophilia defined as absolute eosinophil count greater than 500 cells per microliter of blood on complete blood count analysis
3. Availability of peripheral blood smear slides prepared at the time of initial diagnosis and available for review by the study investigators
4. Complete and legible clinical records available in the electronic medical record system or physical case files, containing adequate documentation of presenting symptoms, medical history, and physical examination finding.

Exclusion Criteria

1. Normal eosinophil count (absolute eosinophil count ≤500 cells/μL) on peripheral blood examination
2. Incomplete or missing clinical records preventing adequate assessment of presenting symptoms or demographic information
3. Unavailability of peripheral blood smear slides for morphological review (either slides not prepared, lost, or of inadequate quality for interpretation)
4. Patients receiving systemic corticosteroid therapy at the time of blood sample collection, as corticosteroids can suppress eosinophil counts and alter peripheral smear morphology
5. Known cases of hematological malignancies already receiving active treatment, as treatment-induced changes may confound eosinophil assessment

Procedure for Data Collection

Data collection was conducted systematically through a multi-phase process. Initially, the laboratory information system was searched to identify all patients who underwent complete blood count analysis and had absolute

eosinophil count exceeding 500 cells/µL. Corresponding medical records of identified patients were retrieved and reviewed using a structured, pilot-tested proforma to extract demographic information (age, gender) and clinical symptoms documented at presentation (fever, cough, dyspnea, skin manifestations, gastrointestinal symptoms, and others). Laboratory parameters including hemoglobin, total leukocyte count, platelet count, differential count, and absolute eosinophil count were recorded from automated analyzer reports. Peripheral blood smear slides prepared at the time of diagnosis were retrieved from the laboratory archives and independently examined by two experienced hematopathologists blinded to clinical details; smears were assessed for eosinophil morphology (toxic granules, vacuolations, nuclear abnormalities), red blood cell morphology, other white blood cell lineages, and platelet characteristics.

Data Analysis

The cleaned dataset was exported to SPSS version 26.0 (IBM Corp., Armonk, NY, USA) for statistical analysis.

Table 1: Demographic Profile and Severity Distribution of Patients with Eosinophilia (N=80)

Characteristic	Category	Number of Patients (n)	Percentage (%)
Gender	Male	45	56.3
	Female	35	43.7
Age Distribution	0-10 years	8	10.0
	11-20 years	16	20.0
	21-30 years	21	26.3
	31-40 years	12	15.0
	41-50 years	10	12.5
	51-60 years	7	8.7
	>60 years	6	7.5
Eosinophilia Severity	Mild (500-1500/µL)	38	47.5
	Moderate (1500-5000/µL)	29	36.2
	Severe (>5000/µL)	13	16.3

A total of 80 patients with peripheral blood eosinophilia were included. Demographic analysis revealed a slight male predominance (56.3%, n=45) with a male-to-female ratio of 1.3:1. Patient age ranged from 5 to 78 years (mean 38.6 ± 16.4 years). The highest proportion of patients belonged to the 21-30 years age group (26.3%, n=21), followed by the 11-20 years group (20.0%, n=16). Pediatric patients (≤18 years) constituted 15% (n=12), while elderly patients (>60 years) accounted for 7.5% (n=6). Regarding eosinophilia severity, mild eosinophilia (500-1500/µL) was most common, observed in 38 patients (47.5%), followed by moderate (1500-5000/µL) in 29 patients (36.2%), and severe (>5000/µL) in 13 patients (16.3%). The mean absolute eosinophil count was 2840 ± 2150 cells/µL (range 520-12,400 cells/µL).

Table 2: Frequency Distribution of Clinical Symptoms in Patients with Eosinophilia (N=80)

Symptom	Number of Patients (n)	Percentage (%)
Fever	33	41.3
Cough	30	37.5
Skin rash/Pruritus	27	33.8
Dyspnea	18	22.5
Abdominal pain	15	18.8
Fatigue/Weakness	14	17.5
Wheezing	12	15.0
Weight loss	10	12.5
Rhinorrhea/Nasal congestion	9	11.3
Diarrhea	7	8.8
Arthralgia/Myalgia	6	7.5

Lymphadenopathy	5	6.3
Asymptomatic (incidental finding)	8	10.0

Analysis of clinical presentations revealed a wide spectrum of symptoms among patients with eosinophilia. Fever was the most frequently reported symptom, occurring in 33 patients (41.3%). Respiratory symptoms were prominent, with cough in 30 patients (37.5%), dyspnea in 18 patients (22.5%), and wheezing in 12 patients (15.0%). Cutaneous manifestations (rash and pruritus) were observed in 27 patients (33.8%), representing the third most common symptom category. Gastrointestinal symptoms included abdominal pain in 15 patients (18.8%) and diarrhea in 7 patients (8.8%). Constitutional symptoms comprised fatigue/weakness in 14 patients (17.5%) and weight loss in 10 patients (12.5%). Other symptoms included rhinorrhea/nasal congestion (11.3%), arthralgia/myalgia (7.5%), and lymphadenopathy (6.3%). Notably, 8 patients (10.0%) were completely asymptomatic, with eosinophilia detected incidentally during routine evaluations.

Table 3: Association of Clinical Symptoms with Eosinophilia Severity (N=80)

Symptom	Mild (n=38) n (%)	Moderate (n=29) n (%)	Severe (n=13) n (%)	p-value
Fever	12 (31.6)	13 (44.8)	8 (61.5)	0.042*
Cough	11 (28.9)	12 (41.4)	7 (53.8)	0.038*
Skin rash/Pruritus	9 (23.7)	11 (37.9)	7 (53.8)	0.021*
Dyspnea	4 (10.5)	8 (27.6)	6 (46.2)	0.008*
Abdominal pain	5 (13.2)	6 (20.7)	4 (30.8)	0.156
Wheezing	3 (7.9)	5 (17.2)	4 (30.8)	0.066
Fatigue/Weakness	4 (10.5)	6 (20.7)	4 (30.8)	0.087
Asymptomatic	7 (18.4)	1 (3.4)	0 (0.0)	0.015*

Analysis of clinical symptoms by eosinophilia severity revealed a significant positive correlation between symptom prevalence and eosinophil count. Fever showed a progressive increase from mild (31.6%) to moderate (44.8%) to severe (61.5%) eosinophilia ($p=0.042$). Similarly, cough (28.9% vs 41.4% vs 53.8%, $p=0.038$) and skin manifestations (23.7% vs 37.9% vs 53.8%, $p=0.021$) demonstrated significant increasing trends. Dyspnea showed the most pronounced gradient (10.5% vs 27.6% vs 46.2%, $p=0.008$). Abdominal pain, wheezing, and fatigue showed increasing trends without statistical significance ($p>0.05$). Notably, asymptomatic presentation was almost exclusively observed in mild eosinophilia (18.4% of mild cases vs 3.4% moderate vs 0% severe), with this inverse association being statistically significant ($p=0.015$).

Table 4: Peripheral Smear Findings in Patients with Eosinophilia (N=80)

Finding	Number of Patients (n)	Percentage (%)
Eosinophil Morphological Abnormalities		
Toxic granules in eosinophils	23	28.8
Vacuolated eosinophils	12	15.0
Hypersegmented eosinophils (>3 lobes)	8	10.0
Hyposegmented eosinophils (bilobed/unilobed)	4	5.0
Any nuclear abnormality	12	15.0
Döhle bodies	3	3.8
Red Blood Cell Abnormalities		
Anemia (Hemoglobin <12 g/dL)	41	51.3
Microcytic hypochromic RBCs	28	35.0
Normocytic normochromic RBCs	45	56.2
Anisocytosis	19	23.8
Poikilocytosis	12	15.0
White Blood Cell Abnormalities (other lineages)		

Left shift in neutrophils	9	11.3
Toxic granules in neutrophils	7	8.8
Lymphocytosis (>40%)	7	8.8
Platelet Abnormalities		
Thrombocytosis (>4.5 lakh/μL)	12	15.0
Thrombocytopenia (<1.5 lakh/μL)	3	3.8
Giant platelets on smear	8	10.0

Peripheral smear examination revealed important morphological findings beyond quantitative eosinophil counts. Among eosinophil-specific abnormalities, toxic granules were most frequent, observed in 23 patients (28.8%), followed by vacuolated eosinophils in 12 patients (15.0%). Nuclear abnormalities were noted in 12 patients (15.0%), including hypersegmented (10.0%) and hyposegmented (5.0%) forms. Döhle bodies were rare (3.8%). Anemia was the most prevalent concurrent hematological abnormality, affecting 41 patients (51.3%), with microcytic hypochromic morphology in 28 patients (35.0%). Other red cell abnormalities included anisocytosis (23.8%) and poikilocytosis (15.0%). Examination of other lineages revealed left shift in neutrophils (11.3%), toxic granules in neutrophils (8.8%), and relative lymphocytosis (8.8%). Platelet abnormalities comprised thrombocytosis (15.0%), giant platelets (10.0%), and thrombocytopenia (3.8%).

Table 5: Correlation of Peripheral Smear Abnormalities with Eosinophilia Severity (N=80)

Peripheral Smear Finding	Mild (n=38) n (%)	Moderate (n=29) n (%)	Severe (n=13) n (%)	p-value
Toxic granules	5 (13.2)	11 (37.9)	7 (53.8)	0.002*
Vacuolated eosinophils	2 (5.3)	5 (17.2)	5 (38.5)	0.004*
Nuclear abnormalities	3 (7.9)	5 (17.2)	4 (30.8)	0.048*
Hematological Abnormalities				
Anemia (Hb <12 g/dL)	16 (42.1)	16 (55.2)	9 (69.2)	0.036*
Microcytic hypochromic RBCs	10 (26.3)	11 (37.9)	7 (53.8)	0.067
Thrombocytosis	4 (10.5)	5 (17.2)	3 (23.1)	0.315
Left shift in neutrophils	2 (5.3)	4 (13.8)	3 (23.1)	0.118

Stratification of peripheral smear findings by eosinophilia severity revealed significant associations between morphological abnormalities and higher eosinophil counts. Toxic granules showed a strong positive correlation with severity, increasing from 13.2% in mild to 37.9% in moderate and 53.8% in severe eosinophilia (p=0.002). Similarly, vacuolated eosinophils (5.3% vs 17.2% vs 38.5%, p=0.004) and nuclear abnormalities (7.9% vs 17.2% vs 30.8%, p=0.048) demonstrated significant increasing trends. Anemia also showed significant association with severity, affecting 42.1% of mild, 55.2% of moderate, and 69.2% of severe cases (p=0.036). Microcytic hypochromic morphology showed an increasing trend (26.3% vs 37.9% vs 53.8%) that approached but did not reach statistical significance (p=0.067). Thrombocytosis and left shift showed increasing frequencies without statistical significance (p>0.05). These findings indicate that both eosinophil-specific morphological abnormalities and concurrent hematological changes are more pronounced in patients with higher eosinophilia severity, suggesting greater disease activity and systemic involvement.

DISCUSSION

This retrospective study of 80 patients with eosinophilia provides valuable insights into the demographic profile, clinical presentations, and peripheral smear findings in a tertiary care setting. The discussion interprets these findings in the context of existing literature and explores their clinical implications.

The present study demonstrated a slight male predominance (56.3%) with a male-to-female ratio of 1.3:1, which aligns closely with findings

from previous studies. Ray et al. (2022) in their Eastern Indian study of 200 patients reported 57.5% males, while Ananchaisarp et al. (2023) observed 52.6% males among 988 patients with eosinophilia in Thailand.[12,13] This consistent male preponderance across different geographical settings may reflect gender-based differences in environmental and occupational exposures to allergens and parasitic infections, or possibly biological variations in eosinophil regulation.

The mean age of 38.6 years and the peak incidence in the 21-30 years age group (26.3%) in our study correspond well with the findings of Ray et al. (2022), who reported maximum patients in the 11-20 years age group (22.5%), closely followed by young adults.[12] The predominance of eosinophilia in younger age groups is likely attributable to higher environmental exposure, occupational activities, and greater prevalence of allergic conditions and parasitic infections in this demographic. Lanng et al. (2025) also observed similar age distributions in their study of refugees, highlighting the impact of environmental factors on eosinophilia prevalence.[14]

Regarding severity distribution, mild eosinophilia (47.5%) was most common in our study, followed by moderate (36.2%) and severe (16.3%). This pattern closely mirrors the findings of Ray et al. (2022), who reported mild eosinophilia in 52.5%, moderate in 39.5%, and severe in 8% of cases.[12] The slightly higher proportion of severe eosinophilia in our study (16.3% versus 8%) may reflect differences in referral patterns, geographic variations in endemic parasitic infections, or varying thresholds for hospital attendance in our population. Ananchaisarp et al. (2023) similarly noted that mild eosinophilia predominates in primary care settings, with severe cases more commonly referred to tertiary centers, which may explain the relatively higher proportion of severe cases in hospital-based studies.[13]

Fever emerged as the most common presenting symptom (41.3%) in our study, followed by cough (37.5%) and skin manifestations (33.8%). This symptom profile is remarkably consistent with the Eastern Indian study by Ray et al. (2022), which reported fever in 46%, skin rashes in 44%, and cough in 42.5% of patients.[12] The high prevalence of fever likely reflects underlying infectious or inflammatory processes driving eosinophilia, particularly in tropical settings where parasitic infections are endemic. Weaver et al. (2024) in their comprehensive review emphasized that fever in eosinophilia often points toward an underlying infectious etiology, particularly helminthic infections, though it may also accompany drug reactions and connective tissue disorders.[15]

Respiratory symptoms collectively affected a significant proportion of our patients, with cough (37.5%), dyspnea (22.5%), and wheezing (15.0%) being frequently reported. These findings align with the well-established association between eosinophilia and respiratory conditions. Liesveld and Emadi (2024) in the MSD Manual note that pulmonary eosinophilia syndromes, including tropical pulmonary eosinophilia, allergic bronchopulmonary aspergillosis, and eosinophilic granulomatosis with polyangiitis, are important diagnostic considerations in patients presenting with respiratory symptoms and eosinophilia.[16] The high prevalence of respiratory symptoms in our study (37.5% cough, 22.5% dyspnea) underscores the importance of thorough pulmonary evaluation in these patients.

Cutaneous manifestations (rash and pruritus) were present in one-third of our patients, consistent with the findings of Ray et al. (2022)[12] and the pathophysiological role of eosinophils in allergic and dermatologic conditions. ARUP Consult (2019) highlights that atopic dermatitis, urticaria, drug reactions, and bullous disorders are common causes of eosinophilia with skin involvement, and the presence of skin symptoms should prompt careful medication history and allergy evaluation.[17]

Gastrointestinal symptoms (abdominal pain 18.8%, diarrhea 8.8%) were documented in a substantial subset of patients. This finding is consistent with the growing recognition of eosinophilic gastrointestinal disorders, including eosinophilic esophagitis and gastroenteritis, as important causes of eosinophilia with GI manifestations (Weaver et al., 2024)[15]. In tropical countries, parasitic infections, particularly helminths, frequently present with abdominal symptoms and eosinophilia, necessitating thorough stool examination and serological testing.

Notably, 10% of our patients were asymptomatic, with eosinophilia detected incidentally. This finding is consistent with Ananchaisarp et al. (2023), who reported that

many cases of mild eosinophilia in primary care settings are incidentally detected during routine health examinations.[13] This emphasizes that eosinophilia may be an isolated laboratory abnormality without clinical manifestations, particularly in mild cases, though even asymptomatic patients require evaluation as persistent eosinophilia can lead to subclinical end-organ damage over time (Liesveld & Emadi, 2024).[16]

A key finding of our study was the significant positive correlation between symptom prevalence and eosinophilia severity. Fever, cough, skin manifestations, and dyspnea all showed statistically significant increasing trends with higher eosinophil counts. This finding is biologically plausible, as higher eosinophil counts are associated with greater tissue infiltration and cytokine-mediated inflammation. Weaver et al. (2024) explain that eosinophil granule proteins (major basic protein, eosinophil cationic protein, eosinophil peroxidase, and eosinophil-derived neurotoxin) are cytotoxic to tissues and their release correlates with eosinophil numbers and activation state.[15] Liesveld and Emadi (2024) note that while mild eosinophilia (<1500/μL) itself typically does not cause symptoms, levels ≥1500/μL may cause organ damage if persistent, which aligns with our observation that asymptomatic presentation was almost exclusively seen in mild eosinophilia (18.4% of mild cases versus 3.4% of moderate and none with severe eosinophilia).

The significant association between dyspnea and eosinophilia severity (p=0.008) is particularly noteworthy, as it may reflect eosinophilic infiltration of pulmonary tissue or airway inflammation. Ray et al. (2022) similarly observed that respiratory symptoms were more pronounced in patients with higher eosinophil counts, particularly in those with tropical pulmonary eosinophilia, where eosinophil counts often exceed 3000/μL.[12]

Peripheral smear examination revealed important morphological abnormalities in a substantial proportion of patients. Toxic granules in eosinophils were the most common finding (28.8%), followed by vacuolation (15.0%) and nuclear abnormalities (15.0%). These morphological changes were significantly more frequent in patients with severe eosinophilia, suggesting that eosinophil activation and degranulation correlate with disease severity. Weaver et al. (2024) emphasize that toxic granulation represents increased enzyme content in primary granules and indicates cellular activation, while vacuolation may represent cytoplasmic degeneration or artifact from prolonged sample storage.[15] The presence of these morphological abnormalities, particularly in patients with high eosinophil counts, should alert clinicians to heightened eosinophil activity and potential for tissue damage.

Nuclear abnormalities, including hypersegmentation (10.0%) and hyposegmentation (5.0%), were observed in 15% of patients. ARUP Consult (2019) notes that while hypersegmentation can occur in reactive eosinophilia, hyposegmentation (bilobed or unilobed nuclei) should raise suspicion for clonal eosinophilic disorders such as chronic eosinophilic leukemia.[17] The presence of such abnormalities, particularly in patients with very high eosinophil counts or accompanying cytopenias, warrants bone marrow examination and cytogenetic studies to exclude primary hematological malignancies.

Anemia was the most common concurrent hematological abnormality, present in 51.3% of patients, with microcytic hypochromic morphology in 35.0%. This high prevalence of anemia is consistent with Ray et al. (2022), who reported anemia in 57.5% of their eosinophilia patients.[12] The association between eosinophilia and anemia may be explained by several mechanisms: chronic parasitic infections (e.g., hookworm) causing both eosinophilia and iron deficiency anemia, chronic inflammation suppressing erythropoiesis, nutritional deficiencies, or bone marrow involvement in primary disorders. The significant association between anemia and eosinophilia severity (p=0.036) in our study suggests that more severe eosinophilia is often accompanied by greater systemic disease burden affecting multiple cell lines.

Thrombocytosis (15.0%) and left shift in neutrophils (11.3%) were other notable findings, likely representing inflammatory responses to underlying conditions. Athens Diagnostic Laboratory (2025) notes that reactive thrombocytosis frequently accompanies inflammatory conditions, including those associated with eosinophilia.[18] Thrombocytopenia was rare (3.8%), and its presence should prompt evaluation for bone marrow pathology or hypersplenism.

CONCLUSION

In conclusion, this study demonstrates that eosinophilia predominantly affects young adults with a slight male predilection, with mild eosinophilia being the most common severity category. Fever, cough, and skin manifestations are the predominant clinical symptoms, with symptom prevalence increasing significantly with eosinophilia severity. Peripheral smear examination reveals important morphological abnormalities, particularly toxic granules, which correlate with disease severity. Concurrent anemia affects over half of patients and shows significant association with eosinophilia severity. The peripheral smear method remains an invaluable, cost-effective tool in the initial assessment of eosinophilia, complementing automated cell counts and guiding further diagnostic workup.

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