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The Role of Accessible Haematological Markers in Bullous Pemphigoid: A Systematic Review

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 August 2025 and was last updated on 13 August 2025.

INTRODUCTION

Review question / Objective This systematic review aimed to evaluate current evidence regarding the clinical utility of haematological markers derived from the complete blood count (CBC) in patients with bullous pemphigoid.

Condition being studied Bullous pemphigoid (BP) is the most common autoimmune subepidermal blistering disease. Its pathogenesis involves autoantibodies targeting hemidesmosomal proteins (BP180 and BP230), leading to complement activation and inflammatory cell recruitment, with eosinophils playing a central role. Recently, there has been growing interest in identifying simple haematological markers, such as eosinophil count and derived ratios like the neutrophil-to-lymphocyte ratio (NLR), that may support diagnosis, monitoring disease activity and prognosis.

METHODS

Participant or population A systematic review was conducted of the MEDLINE and EMBASE databases according to PRISMA guidelines. Studies which assessed haematological markers, in patients with diagnosis of bullous pemphigoid, derived from CBC were included. Studies were excluded if BP diagnosis was not confirmed through immunological testing or if diagnostic methods were not clearly described. Study quality was assessed using the Newcastle-Ottawa Scale (NOS).

Intervention Studies which assessed haematological markers, in patients with diagnosis of bullous pemphigoid, derived from CBC were included. Studies were excluded if BP diagnosis was not confirmed through immunological testing or if diagnostic methods were not clearly described. Study quality was assessed using the Newcastle-Ottawa Scale (NOS).

Comparator Not applicable.

Study designs to be included The Ovid MEDLINE and EMBASE databases were searched for English language peer--reviewed papers published until 2 May 2025. The titles and abstract were searched and screened by a single author (AM). The search terms were "Neutrophils" OR "Neutrophil count" OR "Lymphocytes" OR "Lymphocyte count" OR "Platelet" OR "Platelet count" OR "Eosinophil count" OR "Eosinophilia" OR "NLR" OR "Neutrophil-to-lymphocyte" OR "Red cell distribution width" OR "Red cell count" OR "Full blood cell count" AND "Bullous pemphigoid" OR "Pemphigoid".

Eligibility criteria The Ovid MEDLINE and EMBASE databases were searched for English language peer--reviewed papers published until 2 May 2025. The titles and abstract were searched and screened by a single author (AM). The search terms were "Neutrophils" OR "Neutrophil count" OR "Lymphocytes" OR "Lymphocyte count" OR "Platelet" OR "Platelet count" OR "Eosinophil count" OR "Eosinophilia" OR "NLR" OR "Neutrophil-to-lymphocyte" OR "Red cell distribution width" OR "Red cell count" OR "Full blood cell count" AND "Bullous pemphigoid" OR "Pemphigoid". Only studies published in English and conducted on human subjects were included in the systematic review. Non-¬clinical studies, reviews, case reports, unpublished data and conference reports were excluded. Studies in which the diagnosis was made only based on clinical and histopatological examination, or in which the method used to establish the diagnosis was not described at all, were not included.

Information sources The Ovid MEDLINE, EMBASE databases were searched and grey literature.

Main outcome(s) Eosinophil count and NLR were the most frequently evaluated and clinically informative haematological markers. Eosinophil count appears to be the most promising, showing correlations with disease severity, clinical phenotype, treatment response, and relapse risk. NLR may serve as an accessible marker of therapeutic response and disease prognosis. Given their availability and cost-effectiveness, these parameters have potential value in the routine clinical management of BP.

Quality assessment / Risk of bias analysis Newcastle-Ottawa Scale (NOS) was used.

Strategy of data synthesis One author extracted the data. Relevant data (authors, the date and type of the study, the number and demographics of the patients, the diagnostic method) were exported to a bespoke database. Microsoft Excel (Microsoft, USA) was used to calculate the mean and SD of the age and male to female ratio.

Subgroup analysis No subgroup analyses are planned for this review.

Sensitivity analysis Sensitivity analyses will be performed to assess the results by excluding studies at high risk of bias, studies with incomplete outcome data, and outliers with extreme effect sizes. If the conclusions change substantially after these exclusions, the limitations will be discussed.

Language restriction English.

Country(ies) involved Poland.

Keywords bullous pemphigoid, neutrophil to lymphocyte ratio, eosinophil.

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