

Opinion

Beyond Clinical Toxicity: Repositioning the Truelove and Witts Criteria in the Treat-to-Target Era of Acute Severe Ulcerative Colitis

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Abstract

Ulcerative colitis affects millions of people worldwide, and acute severe ulcerative colitis (ASUC) remains one of its most urgent presentations because delayed recognition of steroid non-response can expose patients to colectomy, postoperative complications, and prolonged hospitalization. The Truelove and Witts (T&W) criteria, first published in 1955, remain historically important because they provide a simple bedside definition of severe disease and continue to inform admission thresholds in contemporary practice. This opinion article argues that the T&W criteria should be retained as an entry definition for classic ASUC but should no longer be used as a standalone framework for dynamic risk stratification or treatment escalation. Modern guidelines and consensus statements increasingly supplement clinical toxicity with C-reactive protein (CRP), albumin, fecal calprotectin, validated endoscopic scores, intestinal ultrasound, and early prognostic indices. These tools do not replace bedside assessment; rather, they help clinicians identify steroid non-response and inflammatory burden before systemic toxicity alone becomes decisive. A balanced interpretation is therefore required: the T&W criteria remain useful because they are simple, familiar, and globally applicable, but they are insufficient by themselves for treat-to-target decision-making. Future ASUC severity classifications should integrate traditional clinical assessment with objective biomarkers, endoscopic findings, imaging, and prospective validation across both resource-rich and resource-limited settings.

Keywords: ulcerative colitis; Truelove and Witts criteria; acute severe ulcerative colitis; treat-to-target; mucosal healing; clinical biomarkers; endoscopic indices; clinical guidelines



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1. Why T&W Still Matter in Day-to-Day Practice

ASUC is not simply a severe symptom flare; it is a clinical emergency requiring admission, intravenous corticosteroids, close reassessment, and timely consideration of rescue therapy or colectomy when response is inadequate [1–5]. The continued global relevance of the T&W criteria is partly explained by their pragmatic design. In the 1950s, clinicians had limited access to advanced laboratory testing, endoscopy, cross-sectional imaging, or bedside ultrasound, so T&W selected stool frequency, temperature, pulse, hemoglobin, and erythrocyte sedimentation rate (ESR) as markers that could be assessed in almost any hospital [2].

The T&W criteria are valuable as a diagnostic and admission definition of a classic ASUC phenotype, not as a complete prognostic or treatment-escalation algorithm. These

functions should remain separate: admission recognition, estimation of steroid-failure risk, and decisions to escalate beyond corticosteroids. The T&W criteria address the first; the latter two require additional objective information [3–5].

Accordingly, T&W should be the pathway entry point, supplemented by CRP, fecal calprotectin, endoscopic severity indices, intestinal ultrasound, and time-bound reassessment. This preserves accessibility while avoiding reliance on late systemic toxicity when more direct evidence of inflammatory burden is available [3,6].

Scope and Approach

This opinion article offers a focused conceptual appraisal rather than a systematic review. Evidence was selected from the international guidelines and consensus statements cited here, together with pivotal or recent studies that define the clinical roles of the T&W criteria, the Oxford Day-3 score, ACE, endoscopy, biomarkers, and intestinal ultrasound in ASUC. The sources were used to compare purpose, timing, feasibility, and limitations—not to claim exhaustive retrieval or formal certainty grading. The article’s contribution is therefore a testable sequencing hypothesis, not a new efficacy estimate: retain T&W for admission recognition, use ACE conditionally as an admission-stage adjunct when its components are safely available, and preserve Oxford Day-3 reassessment before escalation. Prospective studies should compare this sequence with usual care using prespecified outcomes, calibration, decision-curve utility, time to rescue therapy or colectomy, and performance across resource settings.

2. Blind Spots of a Toxicity-Based Framework

The major limitation of the T&W criteria is not that the criteria are wrong, but that they are incomplete for modern prognostication. A patient may have frequent bloody stools and severe mucosal inflammation without fever, marked tachycardia, or a very high ESR. In such cases, the T&W definition can classify the patient outside the classic severe category even though the inflammatory trajectory may still require intensive reassessment. This should be described as a risk of under-recognition rather than proof that T&W directly causes delayed care.

The Oxford Day-3 score addressed part of this gap by combining stool frequency and CRP after three days of intravenous corticosteroids to predict poor outcome in severe ulcerative colitis [7]. More recent work has extended this logic. The ACE index, based on albumin, CRP, and endoscopic severity, was validated in the CONSTRUCT dataset for prediction of intravenous corticosteroid non-response [8]. In the pathway proposed in this opinion, ACE is positioned as an admission-stage adjunct or bridge when its components can be obtained safely and promptly; it does not replace T&W or time-bound reassessment. These data do not make T&W obsolete; they support supplementing bedside criteria when assessing the likelihood of corticosteroid response.

Intestinal ultrasound parameters, including bowel wall thickness and vascularity, have been associated with corticosteroid response in hospitalized severe ulcerative colitis and may support early reassessment where expertise is available [9]. Biomarkers and endoscopic indices also address the mismatch between symptom improvement and mucosal activity. CRP changes more dynamically than ESR in many inflammatory settings, fecal calprotectin reflects neutrophil activity in the intestinal lumen, and UCEIS or Mayo Endoscopic Score (MES) can identify severe mucosal injury that may not be captured by systemic signs alone [10,11]. Endoscopic mucosal healing and histologic remission are also associated with important clinical, quality-of-life, and economic outcomes in ulcerative colitis [12]. However, these tools should be interpreted within a clinical context, because

availability, timing, operator expertise, and patient safety may limit their use during an acute admission.

3. Modern Therapeutics and Diagnostics: Supplementation, Not Abandonment

Modern ASUC care is shaped by therapies and monitoring strategies that did not exist when the T&W criteria were developed. Intravenous corticosteroids remain as first-line therapy, while infliximab and cyclosporine are established rescue options for patients with inadequate early response [3–5]. Early surgical consultation is also recommended when medical therapy fails or complications develop, because avoidable delay before colectomy may worsen outcomes [13]. International consensus work on ASUC trial design also emphasizes the need for standardized endpoints when evaluating future escalation strategies [14]. The practical challenge is therefore not merely identifying severe disease at admission, but reassessing response within a defined time window.

The role of JAK inhibitors in ASUC should be presented more cautiously. Emerging evidence, including systematic review data and reports of upadacitinib rescue therapy, suggests potential benefit in selected severe cases, but these approaches remain less established than infliximab or cyclosporine and require careful safety monitoring, especially for thromboembolic and infectious risks [15,16]. They should be discussed as evolving options rather than routine guideline-equivalent rescue therapy.

Point-of-care intestinal ultrasound is another example of supplementation rather than replacement. Early intestinal ultrasound parameters, including bowel wall thickness and vascularity, have been associated with corticosteroid response in hospitalized severe ulcerative colitis [9]. This supports its use as an adjunct where expertise is available, but the evidence should not be overstated as proving that ultrasound universally precedes or replaces clinical assessment. Similarly, fecal calprotectin, CRP, UCEIS, and MES can strengthen early reassessment but must be used pragmatically according to patient stability and local resources [10,11].

4. Current Guidelines and Indices as Multidimensional Successors to T&W

Guidelines establish multidimensional ASUC care but do not determine whether one explicit sequence of admission recognition, admission-stage risk estimation, and Day-3 response assessment improves decisions. The 2025 ACG update retains clinical definitions of severe disease while emphasizing objective assessment, early monitoring, and appropriate escalation [3]. ECCO medical therapeutics guidance similarly places corticosteroids, rescue therapy, and colectomy decisions within a structured therapeutic pathway rather than a toxicity-only framework [4]. The 2025 British Society of Gastroenterology guidelines provide a contemporary UK perspective on adult inflammatory bowel disease management and reinforce the need for systematic assessment and timely treatment decisions [5].

The proposal here is therefore not simply to add modern tests to T&W. Instead, non-interchangeable functions and time points are proposed: T&W for admission recognition, conditional ACE for estimating intravenous corticosteroid non-response at admission, and Oxford Day-3 for observed early response. STRIDE-II supports objective targets beyond symptoms [6], but it does not validate this ASUC-specific sequence.

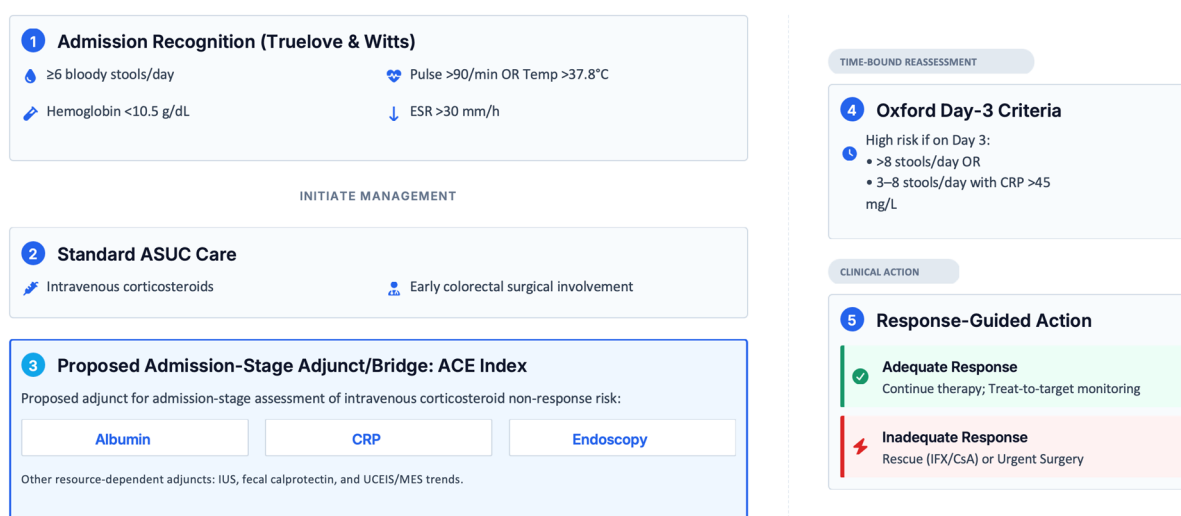
This framework also exposes testable uncertainties. ACE requires timely albumin, CRP, and endoscopic data and may add little when endoscopy is unsafe or unavailable; Oxford Day-3 is broadly usable but cannot advance decisions before corticosteroid response is observed; and ultrasound is repeatable yet operator- and resource-dependent. Prospective multicenter studies should compare the staged pathway with usual care using standardized

outcomes, calibration and decision-curve analyses, time to rescue therapy or colectomy, safety, and performance across resource settings [14]. Table 1 compares the tools by role, timing, evidence, and implementation constraints. Figure 1 retains the original T&W threshold, positions ACE only as a proposed admission-stage adjunct or bridge, and preserves Oxford Day-3 reassessment [2,7–10].

Table 1. Comparison of traditional and contemporary tools used in ASUC assessment.

Tool	Primary Role	Core Components	Strengths	Limitations
T&W criteria	Admission/diagnostic definition of classic ASUC	≥6 bloody stools/day plus at least one systemic toxicity marker: pulse > 90/min, temperature > 37.8 °C, hemoglobin < 10.5 g/dL, or ESR > 30 mm/h [2]	Simple, bedside, globally familiar, low-resource applicability	Limited dynamic prognostication; systemic markers may appear late; not a standalone escalation framework
Oxford Day-3/Travis score	Early steroid-response prediction	On day 3 of intravenous corticosteroids: >8 stools/day, or 3–8 stools/day with CRP > 45 mg/L [7]	Time-bound reassessment; practical early risk stratification	Applies after steroid trial; does not replace initial clinical judgment
ACE index (proposed admission-stage adjunct/bridge)	Admission-stage estimation of intravenous corticosteroid non-response risk	Albumin, CRP, and endoscopic severity [8]	Combines albumin, CRP, and endoscopy; validated for intravenous corticosteroid non-response prediction in the CONSTRUCT dataset [8]	Proposed placement in this pathway; requires endoscopy and complete data; availability may vary
UCEIS/MES	Objective mucosal severity assessment	Endoscopic vascular pattern, bleeding, erosions/ulceration; Mayo endoscopic appearance [10,11]	Directly assesses mucosal injury and predicts short-term outcomes [10,11]	Requires endoscopy, patient stability, trained interpretation
IUS/POCUS	Non-invasive monitoring adjunct	Bowel wall thickness and vascularity [9]	Bedside, repeatable, may support early steroid-response assessment [9]	Operator-dependent; not universally available

Balanced ASUC Assessment Pathway: Retaining Truelove and Witts with Objective Reassessment



Note: The ACE placement is a proposed admission-stage adjunct/bridge requiring prospective validation. Supplement, do not abandon, Truelove and Witts criteria.

Figure 1. Proposed balanced ASUC assessment pathway: retain T&W for admission, use the ACE index as a proposed admission-stage adjunct or bridge for estimating intravenous corticosteroid non-response risk, and reassess response within a defined time window.

5. Global Implementation Barriers and Practical Implications

A globally applicable framework must also acknowledge resource constraints. Treat-to-target care is easiest to implement in centers with rapid CRP testing, fecal calprotectin assays, urgent endoscopy, intestinal ultrasound expertise, biologic and small-molecule access, colorectal surgery, and multidisciplinary IBD teams. Many low- and middle-income settings may not have all of these resources. For such settings, the T&W criteria remain especially important as universal bedside triggers for admission and urgent therapy. Where albumin, CRP, and early endoscopy are available, the proposed pathway uses the ACE index as an admission-stage adjunct or bridge for estimating intravenous corticosteroid non-response risk [8].

The practical implication is a tiered approach. All centers can use T&W, stool frequency, vital signs, hemoglobin, albumin, and CRP where available. Centers with additional resources should add fecal calprotectin, early flexible sigmoidoscopy with UCEIS or MES, intestinal ultrasound, and validated prognostic indices. This approach avoids a false choice between historical and modern tools and makes the proposed framework more realistic for diverse health systems.

6. Conclusions

The T&W criteria should remain universal admission triggers for ASUC, but they should not carry prognostic and escalation functions for which they were not designed. This article proposes a falsifiable sequence rather than another undifferentiated list of tests: T&W admission recognition, conditional ACE estimation of intravenous corticosteroid non-response risk, and prespecified Oxford Day-3 reassessment before response-guided rescue therapy or surgery (Figure 1). Its value should be judged prospectively against usual care by discrimination, calibration, clinical utility, time to escalation, safety, and equity across resource settings. Until such validation, ACE remains an adjunct—not a replacement for T&W or an established mandate.

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Abbreviations

Abbreviation	Definition
ACG	American College of Gastroenterology
ACE	Albumin, C-reactive protein, and Endoscopy index
ASUC	Acute severe ulcerative colitis
BSG	British Society of Gastroenterology
BWT	Bowel wall thickness
CRP	C-reactive protein
ECCO	European Crohn's and Colitis Organization

ESR	Erythrocyte sedimentation rate
FC	Fecal calprotectin
IBD	Inflammatory bowel disease
IOIBD	International Organization for the Study of Inflammatory Bowel Disease
IUS	Intestinal ultrasound
JAK	Janus kinase
LMIC	Low- and middle-income country
MES	Mayo Endoscopic Score
POCUS	Point-of-care ultrasound
STRIDE	Selecting Therapeutic Targets in Inflammatory Bowel Disease
T&W	Truelove and Witts
UC	Ulcerative colitis
UCEIS	Ulcerative Colitis Endoscopic Index of Severity

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