Admission Steroid Use, Serum Albumin and Endoscopic Severity Predict Intravenous Steroid Failure in Patients With Acute Severe Ulcerative Colitis

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ABSTRACT: About 40% of patients with acute severe ulcerative colitis (ASUC) fail corticosteroid therapy, hence it is important to develop criteria which can predict steroid failure earlier. Our aim was to identify variables (clinical, biochemical and endoscopic) and develop a novel day 1 score for predicting steroid failure.

METHODS: All admissions for ASUC (fulfilling Truelove and Witts Criteria) between January 1, 2015 and July 31, 2020 at GCUH and from January 1, 2018 to July 31, 2020 at LGH were retrospectively analysed. Review of electronic medical records was performed and clinical, endoscopic, laboratory data were collected. Steroid failure was defined as need for rescue therapy (medical or surgical). For comparisons of proportions, we used Pearson χ2 test or Fisher’s exact tests. Quantitative data were compared using t-test or Wilcoxon rank sum test. To perform independent predictive factors, a logistic regression model was constructed with the requirement for rescue therapy as the dependent variable.

RESULTS: There were 153 patients with 194 episodes of ASUC included. Seventy-seven (50.3%) female, median age 59.6 years (0–60), median disease duration 1.8 years (0–18). Forty-three (22.2%) episodes were on biological therapy at presentation (26 episodes on anti-TNF inhibitors). Twenty-six (13.5%) patients were using corticosteroids at admittance. Eighty-eight (45.3%) episodes required rescue therapy (83 episodes received medical rescue (15 cyclosporine/68 Infliximab) and 5 underwent direct colectomy). Seventy-eight (81.7%) episodes had a colectomy during the admission for ASUC. On univariate analysis of admission variables, oral steroids (OR 4.21, P = 0.001, CI 2.88–6.97, CRP (OR 1, P = 0.005, CI 1.00–1.01), UCEIS score (OR 2.12, P < 0.001, CI 1.38–2.90) were significant for predicting steroid failure. Fecal calprotectin was not predictive of need for rescue therapy (OR 1, P = 0.803). On multivariate regression analysis oral steroids at admission, albumin and UCEIS remained significant. We developed a novel score (ASUC score) allocating 1 point to each variable (S: albumin ≤ 30 g/L, Steroid use at admission, 3 points allocated to each variable (S: albumin ≤ 30 g/L, Steroid use at admission, UCEIS score ≤ 7) to predict steroid failure. A score of ≥ 7 had a high sensitivity (86.4%), specificity (85.8%), positive predictive value (96.7%), PPV 93.9%, NPV 87.4%, accuracy 73%, 43/132 patients (32.6%) of patients with a score of < 0.01, CI 3.14–9.29, AUROC 0.7756 and the need for colectomy during the same admission (OR 14.12, P < 0.001, CI 2.33–7.63, AUROC 0.8333).

CONCLUSION: 92% of patients with ASUC score ≥ 2 at admission (serum Albumin ≤ 30 g/L, Oral Steroid use, UCEIS ≥ 7 score) fail intravenous corticosteroid therapy and the risk of colectomy in this group is 3 times higher compared to the whole cohort; this group may benefit from upfront second-line therapy.

Outcomes of Acute Severe Ulcerative Colitis in Older Adults

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BACKGROUND: Approximately 40% of patients with acute severe ulcerative colitis (ASUC) do not respond to steroids. There is paucity of data on the outcomes of ASUC in the older adults (≥60 years of age). The primary objective of our study was to assess steroid failure rate. The secondary outcomes assessed were need for colectomy during same admission, at 3 and 12 months, mortality during admission for ASUC, at 3 months and 12 months.

METHODS: All admissions for ASUC (fulfilling Truelove and Witts Criteria) between January 1, 2015 and July 31, 2020 at Gold Coast University Hospital and from January 1, 2018 to July 31, 2020 at Logan Hospital were analysed. Review of electronic medical records was performed and clinical, biochemical and endoscopic, laboratory data were collected. Steroid failure was defined as need for rescue therapy (medical or surgical). For comparisons of proportions, we used Pearson’s chi-square analysis or Fisher’s exact tests. Non-parametric data were compared using Kruskal-Wallis test. Parametric data were compared using paired t-test. To test for independent predictive factors a logistic regression model was constructed with the requirement for rescue therapy as the dependent variable.

RESULTS: We analyzed 194 episodes (153 patients) of ASUC, of which 41 episodes (32 patients) were in patients who were ≥60 years of age at the time of ASUC event. 29 episodes (23 patients) in whom UC was diagnosed ≥60 years of age. Forty-three (43.7%) female, median disease duration 2 years (0–6), median Charlson Comorbidity Index 3 (2–4). Forty-three (34.1%) episodes occurred in patients on biological therapy (6 on anti-TNF antagonists, 8 on Vedolizumab), 15 (36.6%) episodes were on oral corticosteroids at admission. Eighteen (43.9%) required rescue therapy (2 episodes underwent colectomy, 16 episodes received medical rescue therapy (11 infliximab, 5 cyclosporine); 7 patients received IFX 5 mg/kg, 4 patients received IFX 10 mg/kg. In adults ≥60 years, 5 (12.2%) episodes had a colectomy during the admission for ASUC (vs 7.8% in adults < P ≤ 0.0001) when compared to patients < 60 years of age. There was no mortality in patients < 60 years of age. On univariate analysis of admission variables, albumin (OR 0.62, P = 0.01, CI 0.31–0.90), CRP (OR 1.01, P = 0.030, CI 1.00–1.02), UCEIS score (OR 3.68, P = 0.016, CI 1.27–10.60) were significant for predicting steroid failure. On multivariate regression analysis, UCEIS score and albumin remained significant.

CONCLUSION: In patients who are ≥60 years of age, steroid failure rate, the need for colectomy during the same admission and colectomy at 12 months is similar to a population.