Methods: We retrospectively recorded clinical and laboratory parameters in patients admitted to our ICU from 2000-2018. We performed risk factor analysis using univariate and multivariate logistic regression. In the multivariate case we applied the least absolute shrinkage and selection operator (lasso) method for variable selection. We considered average marginal effects and partial dependence plots in order to describe the influence of various independent variables on the probability of death more specifically. We evaluated our new score by comparing the corresponding area under the curve (AUC) to the AUC corresponding to the established SAPS2 score.

Results: We analyzed 58 patients with AAV (39 granulomatosis with polyangiitis, 19 with microscopic polyangiitis) with a mean age of 74 ± 14 (GPA) and 73 ± 12 (MPA). 19/39 (48.7%) of GPA and 9/19 (47.4%) were female. Reasons for admission included disease manifestations or infectious complications from treatment (e. g. pneumonia, urinary tract infection). In total, 13/58 (22.4%) patients died throughout the study (10 GPA, 3 MPA patients). Using a cut-off threshold of 40 for SAPS2, sensitivity and specificity for mortality were 0.92 and 0.60, respectively. Confidence interval for the AUC was [0.68,0.95]. In the fitted multivariate logistic regression model, lasso was applied for variable selection. The identified variables included: disease duration, pH, procalcitonin, hemoglobin, leukocytes on admission, coronary heart disease, and pneumonia on admission. The estimated mortality is given by the formula $f(\beta_0 + \beta_1 x_1 + \dots + \beta_7 x_7)$, where $f(u) = 1/(1 + \exp(-u))$. Table 1 shows the estimated mortality for various values of the new score.

Table 1. Example scores predicting mortality using the novel formula.

Score	Predicted mortality
-2.2	0.1
-1.1	0.25
0	0.5
1.1	0.75
2.2	0.9

Testing if the AUC corresponding to the new model is significantly larger than the one corresponding to the SAPS2 score as independent variable resulted in p-value of 0.037. To identify possible overfitting, a 5-fold cross validation was performed. This resulted in a CI for the AUC of [0.64,0.96], suggesting that the new score allows for simpler prediction of mortality.

Conclusion: We developed a novel formula corresponding to a score which is able to simpler predict mortality in patients with AAV admitted to the ICU. We will test our formula in the available ICU database MIMIC III, which comprises a large dataset of ICU patients.

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POS0826 SKIN LIMITED IGA VASCULITIS IN ADULTS

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Background: IgA vasculitis (IgAV) could be limited to skin or evolve into a systemic disease, affecting characteristically joints, gastrointestinal tract and/or kidneys.

Objectives: We aimed to look for differences between adult IgAV patients with disease limited to skin compared to systemic IgAV.

Methods: Medical records of histologically proven adult IgAV cases, diagnosed between January 2010 and December 2020 at our secondary/tertiary rheumatology centre were analyzed.

Results: During the 132-month observation period we identified 328 new IgAV cases (59.5% males, median (IQR) age 64.3 (45.1; 76.1) years). Ninety-four (40.2%) patients had skin limited disease, and the rest systemic IgAV.

Clinical differences between skin limited and systemic adult IgAV are presented in table 1. Adults with IgAV limited to skin were significantly older, had less commonly skin lesions above the waistline and a lower level of C reactive protein compared to patients with a systemic disease. There were no differences in the frequency of skin necroses between the compared IgAV subgroups. The frequency of potential vasculitis triggers (prior infections, new medications, malignancy) was similar between the compared subgroups.

Table 1. Clinical characteristics of IgA vasculitis patients with skin limited and systemic disease

Clinical characteristics	Skin limited IgAV (94)	Systemic IgAV (234)	P value
Male gender (%)	54.3	61.5	0.263
Age (years)*	68.0 (55.0-80.5)	61.5 (41.7-75.8)	0.007
Current smoker (%)	13.8	21.8	0.123
Antecedent infection (%)	28.7	33.8	0.434
New medication	23.4	23.5	1.0
History of cancer	12.8	10.7	0.569
Symptom duration (days)*	7 (5-21)	8 (5-14)	0.756
Purpura above waistline	36.2	55.6	0.002
Skin necroses (%)	52.1	45.7	0.329
ESR (mm/h) *	32 (18-52)	34 (17-53)	0.873
CRP (g/l) *	13.5 (1-32)	30 (11-68)	<0.001
Elevated serum IgA (%)	50.6	49.1	0.892

Legend: * median and IQR;

Follow up data were available for 250 (76.2%) patients. During the follow up of median (IQR) 12.5 (6.8 – 22.4) months 35 patients relapsed (13/70 (18.6%) with skin limited IgAV and 22/180 (12.2%) with systemic IgAV, p= 0.224).

Conclusion: Skin limited IgAV was associated with older age and less extensive skin purpura in adults. However, relapses of purpura were as common as in systemic IgAV.

Disclosure of Interests: None declared

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POS0827 HEPATOTROPIC VIRUSES WITH HIGHER RHEUMATOID FACTOR, BUT NOT RHEUMATIC DISEASES LINK TO PREVALENT CRYOGLOBULINEMIA. CORRELATION OF CLINICAL AND SEROLOGICAL MARKERS WITH ETIOLOGICAL CAUSES

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Background: Cryoglobulinemia (CG) is a rare phenomenon, which is defined as the persistent presence in serum of abnormal immunoglobulins (Igs) that precipitate in vitro at less than 37°C and dissolve when the temperature rises again. Is related to hematological disorders, infections and autoimmune diseases.

Objectives: To describe the differential clinical features, serological and demographics in a cohort of patients diagnosed with CG.

Methods: We describe a retrospective cohort of 252 cryoglobulin (Cg) positive samples, obtained from a database from the immunology laboratory of a tertiary hospital (November 2018-November 2019). We obtained 182 patients with CG, classified according to their etiology into 4 groups: 1) Rheumatic diseases (RD) that includes rheumatoid arthritis, Systemic lupus erythematosus, Sjögren's syndrome and Systemic sclerosis, 2) Hepatotropic viruses (HV) with patients diagnosed with Hepatitis C virus, B virus and both, 3) Hematological diseases (HD) and 4) Essential cryoglobulinemia (CGE). Demographic variables, clinical and serological data were collected. A comparative analysis was performed with the Mann-Whitney U test and the multivariate Kruskal-Wallis test, nonparametric variables were compared using a Wilcoxon test. Ten patients, with more than one disease from 4 groups, were excluded from the study.

Results: Out of 182 reviewed patients, 172 were included in the study. Mean age at diagnosis was 59.7(±14.0). Demographic, clinical and laboratory characteristics are described in table 1. Mixed CG was the predominant subtype, in 116 (67.4%) patients. The most prevalent CG-associated diseases were HV infection with 91(53%) patients. CGE mostly presented with cutaneous manifestations (p=0.0001), particularly purpura. In RD group the presence of Raynaud and non-erosive arthritis (p=0.0001) was relevant. Laboratory findings showed that CG titration varies according to the etiology, being HD the one with the highest values with 292.2 (±546.2). There is significant difference in

terms of the average of rheumatoid factor (RF) being higher in the group by CGE. On other hand, the group HV presented more consumption of complement, and showed the lowest average $p=0.0001$, without more severe clinical manifestations.

Table 1.

	RD (n=47)	HV (n=91)	HD (n=17)	CGE (n=17)	
Gender, n(%) F	42 (89.4)	57 (62.6)	7 (41.2)	11 (64.7)	
Age at dg, years, (± SD)	60.6 (±14)	59.6 (±13.1)	61.1 (±16.6)	56.3 (±20.8)	$p=0.8$
CLINICAL CHARACTERISTICS					
Skin n (%)	18 (38.3)	10 (11.0)	2 (11.8)	9 (52.9)	$p<0.001$
Raynaud n (%)	14 (29.8)		1 (5.9)	3 (17.6)	$p<0.001$
Purpura n (%)	6 (12.8)	9 (9.9)	2 (11.8)	6 (35.3)	$p=0.04$
Acrocyanosis n (%)	6 (12.8)			1 (5.9)	$p=0.0033$
Ulcers n (%)	3 (6.4)	2 (2.2)	-	2 (11.8)	$p=0.19$
Peripheric Neuro n (%)	10 (21.3)	9 (9.9)	1 (5.9)	4 (23.5)	$p=0.13$
N-E arthritis n (%)	22 (46.8)	8 (8.8)	1 (5.9)	4 (23.5)	$p<0.001$
GMN n (%)	5 (10.6)	3 (3.3)	1 (5.9)	3 (17.6)	$p=0.11$
LABORATORY					
Cg (mg/dL) $\bar{x}$ (± SD)	26.7 (±63.2)	65.8 (±256.5)	292.4 (±546.2)	47.59 (±79.1)	$p<0.001$
Isotype IgG, n (%)	G+M 26 (55.3)	G+M 72 (79.1)	M 8 (47.1)	G+M 12 (70.6)	
$\beta 2M$ (≥ 1.8 mg/L), n (%)	7/40 (17.5%)	1/5 (20.0%)	3/12 (25.0%)	-	$p=0.44$
RCP (mg/L) p 50	10.3 (±26.2)	3.9 (±3.0)	13.4 (±18.3)	8.5 (±12.0)	$p=0.47$
ESR (mm/h) p50	40.0 (±28.5)	20.3 (±20.2)	35.4 (±35.1)	24.5 (±25.0)	$p=0.0003$
RF + (>20U/mL), n (%)	19/46 (41.3)	44/86 (51.2)	5/11 (45.5)	7/17 (41.2)	$p=0.09$
p50	90.6 (±175.9)	161.0 (±219.5)	94.8 (±135.6)	284.5 (±619.3)	$p<0.001$
C3 (<85mg/dL), n (%)	20 (42.6)	47 (51.6)	3 (17.6)	3 (17.6)	$p=0.13$
$\bar{x}$ (± SD)	90.1 (±28.6)	68.5 (±10.8)	99.1 (±29.0)	114.8 (±12.7)	$p<0.001$
C4 (<12mg/dL), n (%)	17 (36.2)	36 (39.6)	-	3 (17.6)	$p=0.02$
$\bar{x}$ (± SD)	15.6 (±9.0)	7.6 (±3.5)	20.4 (±7.4)	21.1 (±9.5)	$p<0.001$

Conclusion: In our cohort, not all patients with CG presented clinical manifestations being those associated with CGE and RD those with the highest skin and joint expression. The most prevalent association of CG continues to be the HV and we confirmed the characteristic decrease in C3 and C4 complement levels, together with the positivity for RF.

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POS0828

CONSISTENT EFFICACY WITH APREMILAST IN MEN AND WOMEN TO TREAT ORAL ULCERS ASSOCIATED WITH BEHÇET'S SYNDROME: PHASE 3 RELIEF STUDY RESULTS

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Background: Painful, recurring oral ulcers (OU) associated with Behçet's syndrome negatively affect quality of life (QoL). Differences across sexes were reported in the frequency of disease manifestations, disease course, and response to colchicine. The phase 3, randomized, double-blind, placebo (PBO)-controlled RELIEF study showed overall efficacy of apremilast (APR) for OU associated with Behçet's syndrome, including improvements in OU pain, disease activity, and QoL.

Objectives: To evaluate the consistency of efficacy with APR in men and women with Behçet's syndrome.

Methods: Adults with active Behçet's syndrome and ≥ 3 OU at randomization or ≥ 2 OU at screening and randomization, without active major organ involvement, were randomized to APR 30mg BID or PBO during the 12-wk PBO-controlled phase. Randomization was stratified by sex. The primary endpoint was area under the curve for the number of OU through Wk 12 (AUC_{Wk0-12}) to assess continued efficacy over the time period in a symptom that waxed and waned. Key secondary endpoints included OU pain, complete response (OU-free), maintenance of complete response, and QoL at Wk 12. Disease activity was also assessed using Behçet's Syndrome Activity Score (BSAS) and Behçet's Disease

Current Activity Index Form (BDCAF). QoL was assessed using Behçet's Disease QoL (BDQoL). Prespecified subgroup analyses in men and women were performed to assess treatment effect in primary and secondary endpoints.

Results: Eighty men and 127 women were randomized and received ≥ 1 dose of study medication. Mean age was 38.7 yrs (men) and 40.8 yrs (women). Mean (SD) OU count at baseline was 3.4 (1.4) (PBO) and 3.7 (1.5) (APR) for men and 4.3 (3.2) (PBO) and 4.5 (4.5) (APR) for women. Greater improvements in favor of APR vs PBO were observed in AUC_{Wk0-12} in men and women (Figure 1). Consistency in efficacy with APR was observed between men and women, with greater reduction in pain and achievement of OU complete response (OU-free) and maintenance of response at Wk 12 vs PBO (Table 1). In men and women, consistent treatment effects in favor of APR vs PBO were observed for disease activity and QoL measures, although moderate treatment differences were observed in BDCAF (men/women) and BDQoL (men) (Table 1).

Conclusion: Consistent treatment effects in favor of APR vs PBO in clinically relevant outcomes, including OU number and pain, OU complete response, and disease activity measures, were observed in men and women with OU associated with Behçet's syndrome.

Key Secondary Efficacy Outcomes at Wk 12

	Men			Women		
	PBO (n = 40)	APR (n = 40)	Tx Difference [95% CI]	PBO (n = 63)	APR (n = 64)	Tx Difference [95% CI]
OU CR, n/N (%)	8/40 (20.0)	21/40 (52.5)	32.6 [12.8, 52.4]	15/63 (23.8)	34/64 (53.1)	29.3 [13.2, 45.4]
OU CR 6+6*, n/N (%)	1/40 (2.5)	10/40 (25.0)	22.8 [8.8, 36.8]	4/63 (6.3)	21/64 (32.8)	26.5 [13.6, 39.3]
Pain (VAS)†	-12.0 (4.8)	-37.6 (4.9)	-25.6 [-37.2, -14.1]	-17.4 (4.4)	-41.5 (4.3)	-24.1 [-34.9, -13.3]
BSAS†	-1.3 (2.4)	-14.4 (2.4)	-13.1 [-18.8, -7.3]	-7.7 (2.4)	-19.7 (2.4)	-12.0 [-18.0, -6.0]
BDCAF†	-0.1 (0.3)	-0.5 (0.3)	-0.4 [-1.1, 0.4]	-0.7 (0.3)	-1.3 (0.3)	-0.6 [-1.2, 0.0]
BDCAI	-0.2 (0.3)	-1.4 (0.3)	-1.2 [-1.9, -0.5]	-1.0 (0.2)	-1.8 (0.2)	-0.9 [-1.4, -0.3]
Patient's Perception of Disease Activity	-0.2 (0.3)	-1.5 (0.3)	-1.3 [-1.9, -0.7]	-1.0 (0.2)	-1.7 (0.2)	-0.7 [-1.3, -0.2]
Clinician's Overall Perception of Disease Activity	-0.2 (0.3)	-1.5 (0.3)	-1.3 [-1.9, -0.7]	-1.0 (0.2)	-1.7 (0.2)	-0.7 [-1.3, -0.2]
BDQoL†	-0.7 (1.0)	-2.2 (1.0)	-1.5 [-3.8, 0.8]	-0.3 (0.9)	-4.4 (0.9)	-4.1 [-6.3, -2.0]

LOCF analyses. *Proportion of patients achieving an OU CR by Wk 6, and remaining OU-free for ≥ 6 additional wks during the 12-wk PBO-controlled treatment phase. †LS mean (SE) change from baseline. BSAS = Behçet's Syndrome Activity Scores; BDCAF = Behçet's Disease Activity Form; CR = complete response; n = number of patients randomized to treatment; Tx = treatment.

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