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Background

- Studies have validated CRP levels to predict Mechanical Ventilation (MV) in patients with COVID-19
- Use in patients with CKD is unclear due to elevated baseline CRP levels due to chronic inflammation and reduced renal clearance of inflammatory cytokines

Objective

Assess the association of inflammatory markers like CRP, ferritin, LDH, D dimer and MV rate in patients with stages IIIb-V CKD and COVID-19

Methods

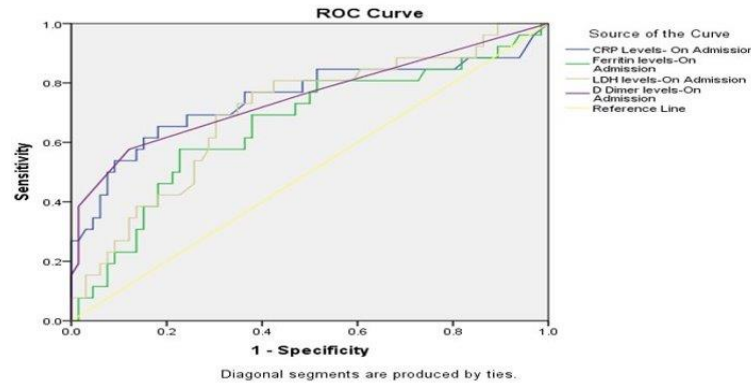
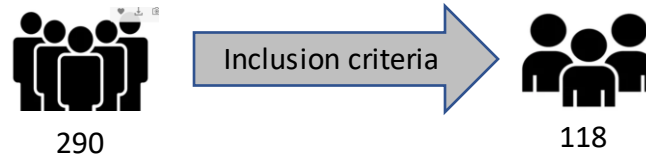
COVID-19

CKD IIIb-V

12/2019 - 1/2022
Cut off for markers
CRP- 100 mg/L, D-Dimer 0.5mg/l
Ferritin-530 ng/ml, LDH 590 U/L

Endpoints: Invasive MV, Non-Invasive MV rates

Results



Area Under the Curve - Invasive Mechanical Ventilation

Variables	AUC	Std. Error	p value	95% CI	Sensitivity	Specificity
CRP	.747	.067	.0001	0.617- 0.878	80.8	50
Ferritin	.658	.066	.019	0.528- 0.788	73	50
LDH	.699	.061	.003	0.579 - 0.82	80.8	50
D dimer	.751	.064	.0001	0.625 - 0.876	76.9	50

Univariate analysis – Invasive Mechanical Ventilation

Variables	OR	p-value	95% CI
MaleSex	0.289	0.01	0.110 - 0.761
Diabetes mellitus	1.364	1.00	0.546 - 3.406
Required HD	9.688	0.002	2.685 - 34.95
CRP > 100 mg/L	5.444	0.01	2.047 - 14.483
Ferritin > 530 ng/ml	2.8	0.01	1.098 - 7.138
LDH > 590 U/L	7.737	0.003	1.821 - 32.87
D - dimer > 0.5 mg/L	3.953	0.01	1.331 - 11.74
WBC >9.86	4.25	0.006	1.513 - 11.96

Discussion

Positive correlation between CRP, Ferritin and D-dimer levels and MV rate with good sensitivity in ROC curves emphasizes utility of these biomarkers in CKD patients with Covid-19

Due to greater magnitude of Inflammation due to Covid-19 disease



Main Finding: CRP, Ferritin, LDH and D-dimer are good predictors of MV in COVID-19 patients with CKD Stages IIIb-V