

Pancreatic Stone Protein (PSP) as a predictive biomarker of multiple organ failure and clinical outcome

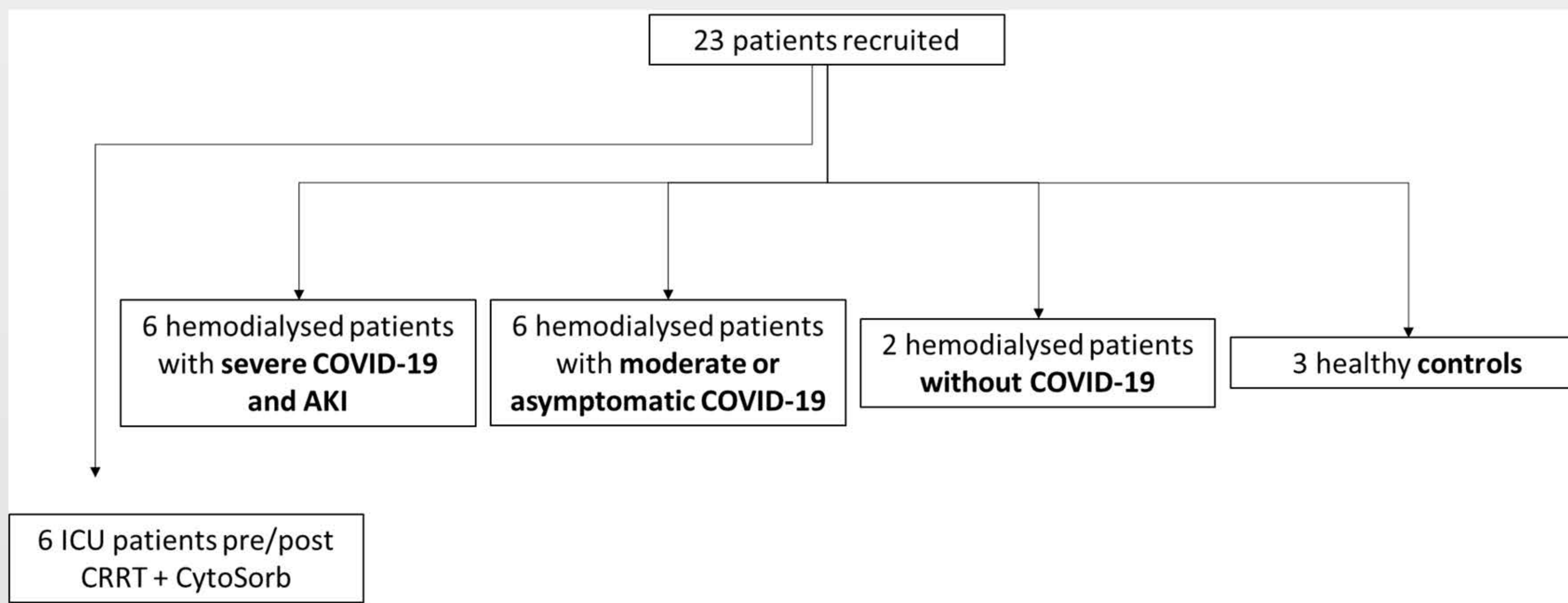
Losappio V¹, Sangregorio F¹, Maiorano A¹, Infante B¹, Stasi A¹, Netti GS¹, Spadaccino F¹, Ranieri E¹, Stallone G¹, Castellano G²

1. Department of Nephrology Dialysis and Transplantation, Azienda Ospedaliero Universitaria di Foggia, Italy
2. Department of Nephrology Dialysis and Transplantation, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Italy

Background/aims

COVID-19 syndrome is associated with high morbidity and mortality in haemodialysed patients. Pancreatic Stone Protein (PSP) is an early biomarker of sepsis and a prognostic biomarker of disease severity in critically-ill patients and can be rapidly measured at the patient's bedside with a point-of-care-test from a small drop of whole blood. The aim of our pilot was to investigate PSP in patients requiring haemodialysis with SARS-CoV-2 infection, at different severities of COVID-19 disease.

Methods



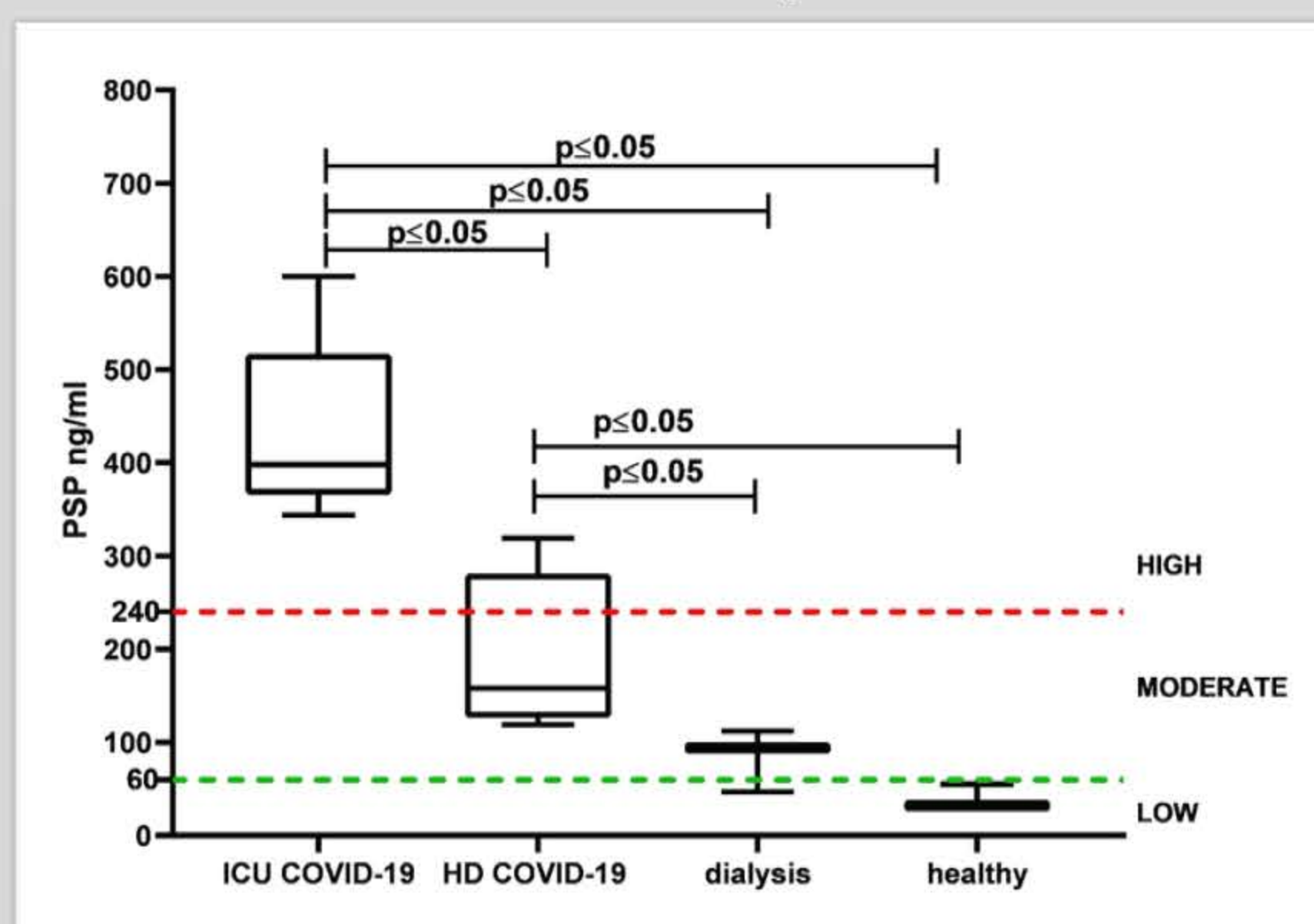
Results

Patients Demographics

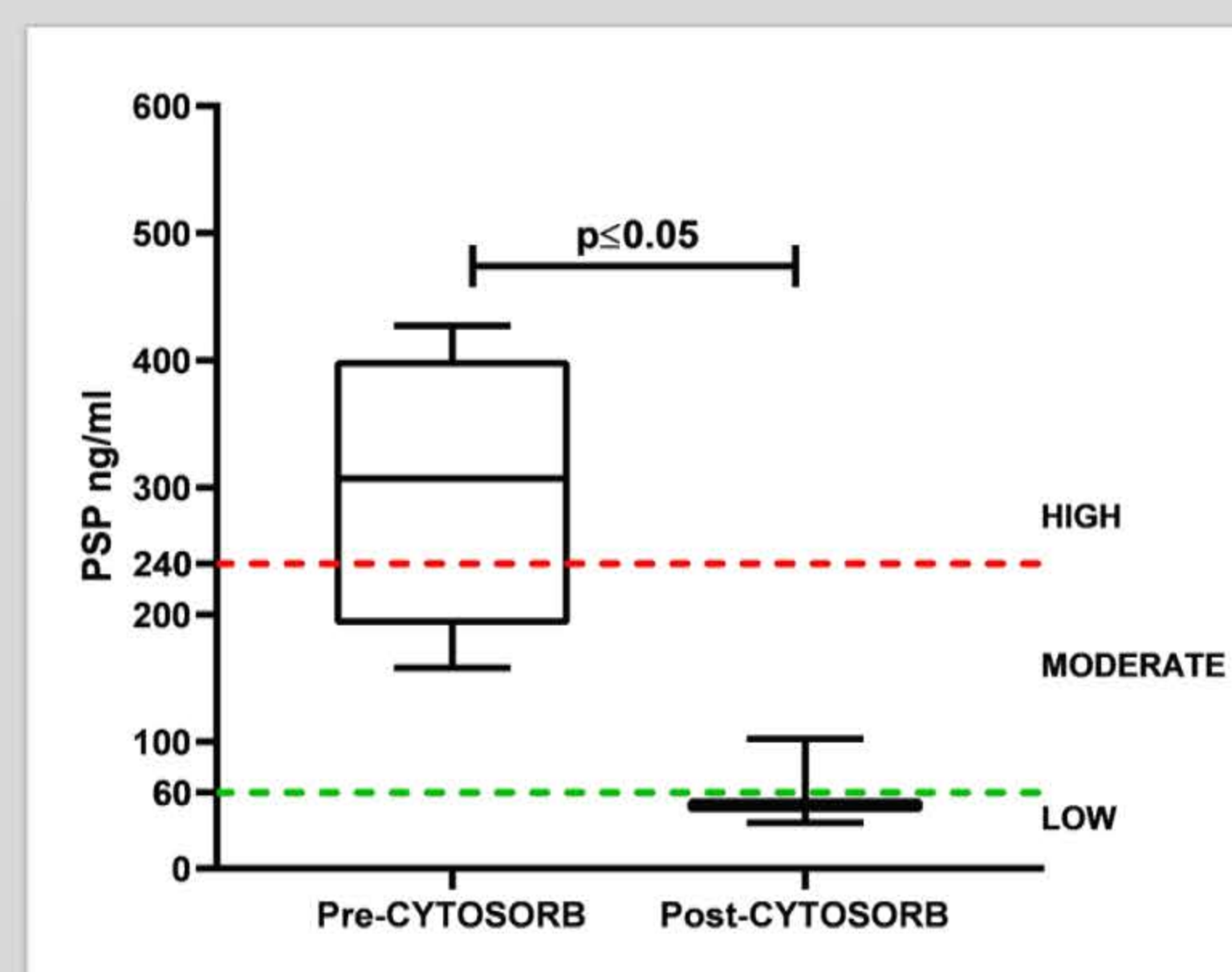
Severe COVID-19 with AKI		Moderate COVID-19 Hemodialysed		COVID-19 Negative Hemodialysed	
Gender		Gender		Gender	
Total, n (%)	6 (100)	Total, n (%)	6 (100)	Total, n (%)	2 (100)
Male, n (%)	4 (66.7)	Male, n (%)	6 (100)	Male, n (%)	2 (100)
Female, n (%)	2 (33.3)	Female, n (%)	0 (0)	Female, n (%)	0 (0)
Age		Age		Age	
Median (IQR)	56 (48.8, 69.8)	Median (IQR)	53 (51.3, 56.3)	Median (IQR)	61 (60, 62)
SOFA Score		Total Number of HD days		Total Number of HD days	
Median (IQR)	10 (9, 10)	Median (IQR)	1155 (675, 1329)	Median (IQR)	1990 (1574, 2405)
Mechanical Ventilation		Symptomatic		Group II: Severe COVID-19 with AKI	
Yes, n (%)	5 (83.3)	Yes, n (%)	5 (83.3)	Total, n (%)	5 (100)
No, n (%)	1 (16.7)	No, n (%)	1 (16.7)	Male, n (%)	3 (60)
ICU length of stay		Hospital length of stay		Age	
Median (IQR)	14 (12, 18)	Median (IQR)	20 (15, 21)	Median (IQR)	60 (51, 61)
Survival		Survival		SOFA Score	
Yes, n (%)	1 (16.7)	Yes, n (%)	6 (100)	Median (IQR)	12 (12, 12)
No, n (%)	5 (83.3)	No, n (%)	0 (0)	Survival	
				Yes, n (%)	0 (0)
				No, n (%)	5 (100)

PSP increased along with the severity of disease. PSP levels were significantly higher in ICU subjects than COVID-19 negative HD subjects and controls. PSP was higher in subjects who died. The relationship between PSP levels and kidney injury or COVID-19 is to be explored.

PSP and The severity of disease



PSP and COVID-19 ICU patients



Conclusion

Several clinical studies published in literature have shown the predictive value of PSP in the early identification of sepsis and severity of the clinical outcome. In our experience we have seen a trend for PSP to increase with disease severity also in COVID-19 patients. These results are preliminary, but PSP was significantly higher in patients who died, in accordance with the literature. This experience also has demonstrated the feasibility of a point of care system to be easily implemented in the unit and adopted by personnel and its design enables fast results and immediate decisions to be taken, especially in urgent situations.