

DOI: [10.4081/monaldi.2022.2358](https://doi.org/10.4081/monaldi.2022.2358)

**Respiratory Intensive Care Unit management and efficacy during the COVID-19 outbreak in Naples, Italy**

Giorgio E. Polistina<sup>1</sup>, Camilla Di Somma<sup>1</sup>, Martina Flora<sup>1</sup>, Alberto E. Maraolo<sup>2</sup>,  
Novella Carannante<sup>3</sup>, Gerardo Langella<sup>1</sup>, Angela I. Mirizzi<sup>1</sup>, AnnaAnnunziata<sup>1</sup>,  
Giuseppe Fiorentino<sup>1</sup>

<sup>1</sup>Sub-Intensive Care Unit and Respiratory Physiopathology Department;<sup>2</sup>First Division of Infectious Diseases; <sup>3</sup>Emergency Room, Cotugno-Monaldi Hospital, AORN Ospedali dei Colli, Naples, Italy

**Corresponding author:** Giorgio Emanuele Polistina, MD. Department of Physiopathology Cotugno-Monaldi Hospital, Naples, Italy. E-mail: [giorgiopolistina@gmail.com](mailto:giorgiopolistina@gmail.com)

**Key words:** COVID-19; non-invasive ventilation; pneumonia; RICU; AHRF.

---

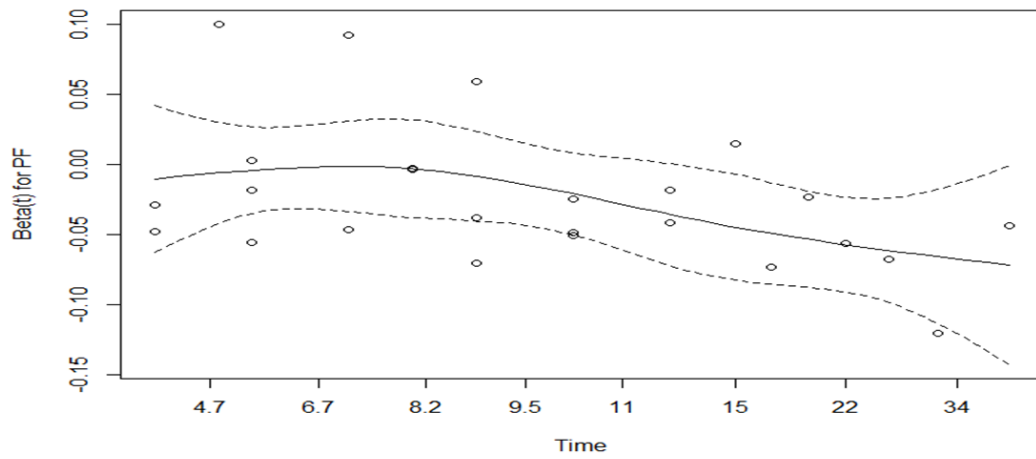
### Cox Model

In case Kaplan-Meier curves crossed over, a weighted log-rank tests (the Fleming-Harrington) was implemented. Specifically, values of P/F ratio lower than 100 was introduced as explanatory variable of interest after dichotomization of the continuous covariate in the light of its non-linear trend against a clear difference between patients experience the main outcome and who not experiencing at univariate analysis (Supplementary Table 1 and Supplementary Figure 1). Performance of the model by ROC curve analysis (a value of 1 indicates perfect agreement between the survival time and the risk score generated by set of predictors, being values of 0.6 to 0.7 more common in survival data).

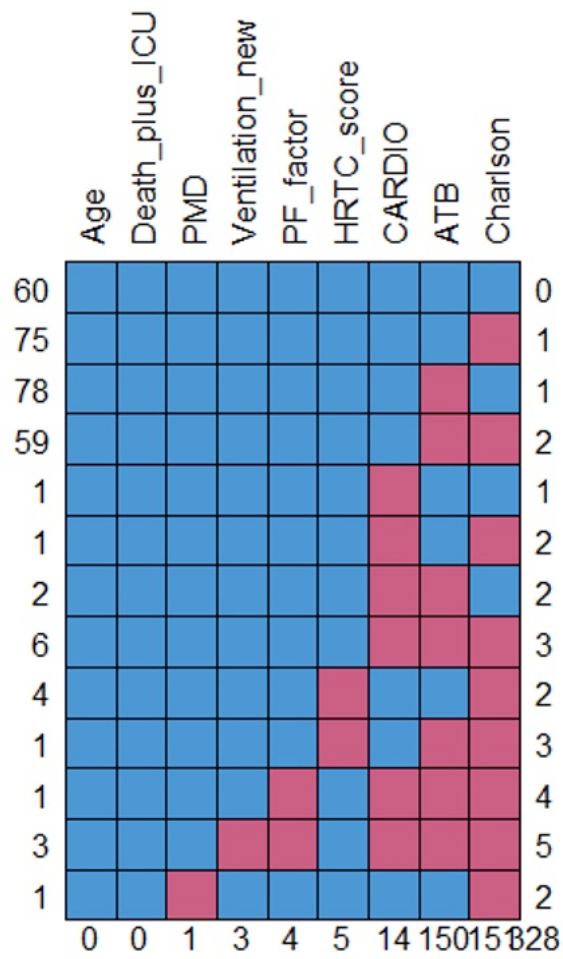
**Supplementary Table 1.** Diagnostics for the Cox model.

	chisq	df	p
Age	0.39609	1	0.529
Charlson Comorbidity Index	0.08986	0	0.764
Cardiovascular comorbidity	0.00369	1	0.952
HRTC score	0.64767	1	0.421
P/F ratio	4.03008	1	0.045
Antibiotic therapy	0.30070	1	0.583
Type of ventilation	4.89058	2	0.087
Pneumomediastinum	1.08016	1	0.299
GLOBAL	11.31926	9	0.254

The proportional hazards (PH) assumption can be checked using statistical tests and graphical diagnostics based on the scaled Schoenfeld residuals. The proportional hazard assumption is supported by a non-significant relationship between residuals and time, and refuted by a significant relationship. From the output above, the test is not statistically significant for each of the covariates, except for P/F ratio and the global test is also not statistically significant. Therefore, we can assume the proportional hazards after resolving the violation related to the covariate, that was factorized as categorical.



**Supplementary Figure 1.** Graph of the scaled Schoenfeld residuals against the transformed time as for P/F continuous variable.



Supplementary Figure 2. Pattern of missingness.