Material suplementario: Análisis de supervivencia sobre el tiempo de permanencia en Unidades de Cuidados Intensivos para pacientes de COVID-19 en Cali, Colombia

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1. Análisis descriptivo

Cuadro S1: Non-parametric Mann–Whitney U test for two independent samples

	Sex		*Chronic*	
	W	*p-value*	*W*	*p-value*
Age	421358	0,2438	358133,5	2,07e−20***
ICU LoS	426576,5	0,4673	945516	0,0000***
Time from SO to ICU	459781,5	0,0385	470060	0,8274

Null hypothesis: The two populations have identical distributions. *ICU LoS* = Intensive Care Unit Length of Stay. *Time from SO to ICU* = Time from Symptoms Onset to ICU admission. W = Test statistic. Sex: 1 if female; 0 if male. Chronic: 1 if $T \geq 21$; 0 if $T < 21$. $^{***}p - value < 0{,}01$, $^{**}p - value < 0{,}05$, $^{*}p - value < 0{,}1$.

Cuadro S2: Shapiro-Wilk normality test for continuous variables

	Skewness	*Kurtosis*	*W*	*p-value*
Age	$-0,7328$	$3,3296$	$0,9623$	$3,98\text{e}{-18}^{***}$
ICU LoS	$2,2575$	$8,4785$	$0,7129$	$1,59\text{e}{-42}^{***}$
Time from SO to ICU	$2,8088$	$15,3450$	$0,7498$	$1,37\text{e}{-44}^{***}$

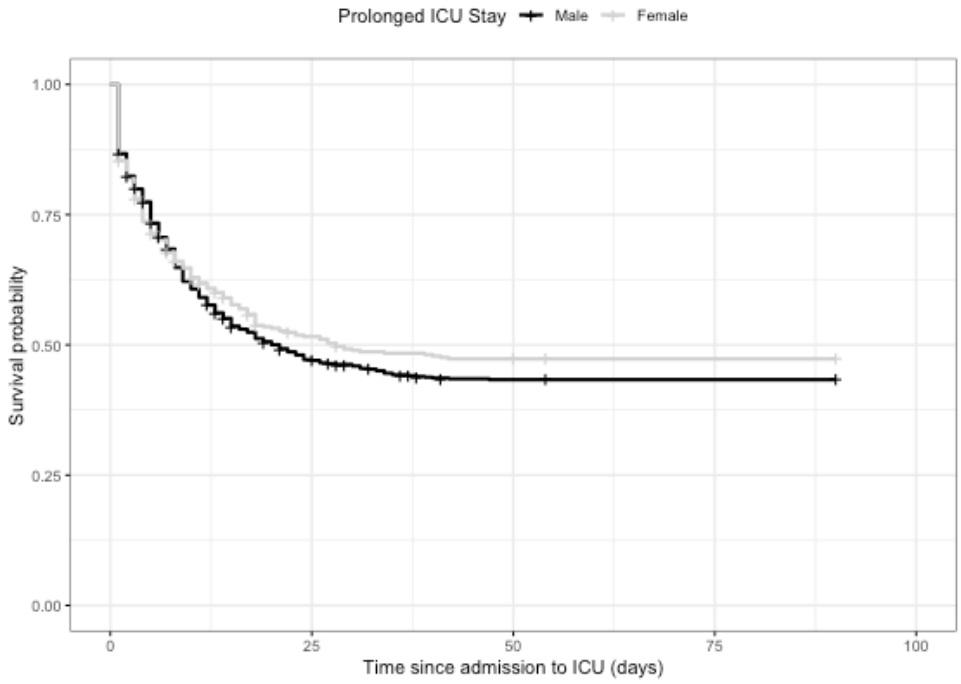
Null hypothesis: the sample comes from a Gaussian distribution. *ICU LoS* = Intensive Care Unit Length of Stay. *Time from SO to ICU* = Time from Symptoms Onset to ICU admission. W = Test statistic. $^{***}p-value < 0{,}01$, $^{**}p-value < 0{,}05$, $^{*}p-value < 0{,}1$.

Cuadro S3: Chi-square (χ^2) test of independence

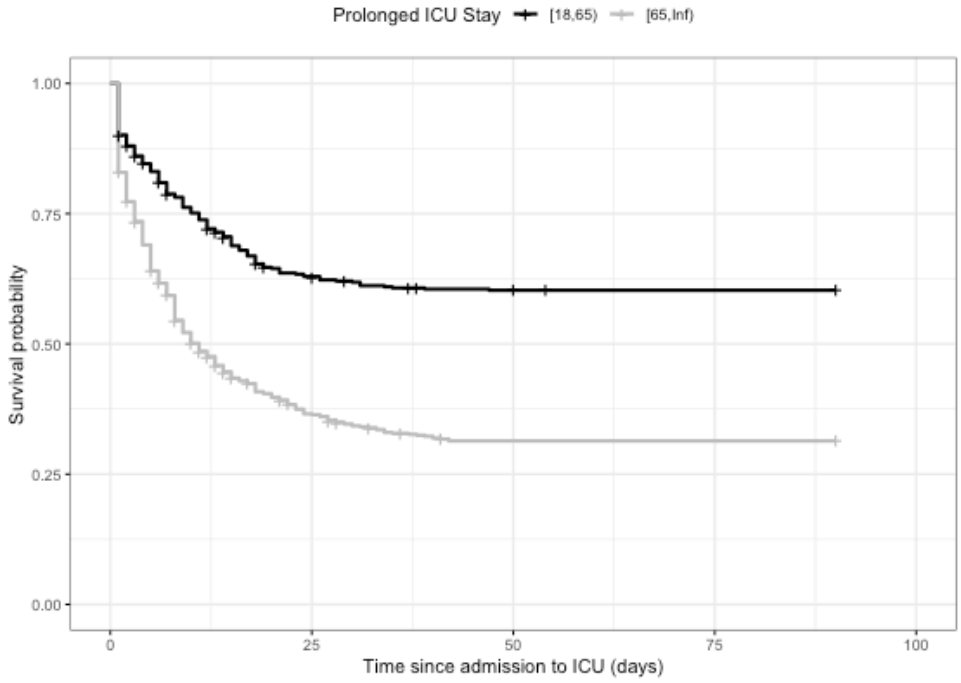
Z_1	Z_2	χ^2	*df*	*p-value*
Sex	Chronic	0,007858513	1	0,9293615
Sex	Outcome	4,18183966	2	0,1235734
Chronic	Outcome	327,9942	2	$0{,}000^{***}$

Null hypothesis: the two variables are independent. Sex: 0 if female; 1 if male. Chronic: 1 if $T \geq 21$; 0 if $T < 21$. Outcome: 0 if censored; 1 if discharged alive; 2 if died from COVID-19. $^{***}p-value < 0{,}01$, $^{**}p-value < 0{,}05$, $^{*}p-value < 0{,}1$. It is found that Chi-square (χ^2) test of independence and Fisher's exact test yield the same conclusion.

2. Estimador no-paramétrico de Kaplan-Meier



(a)



(b)

Figura S1: Kaplan-Meier survival curves of critically ill patients with COVID-19. Cumulative survival rate at 90 days for study variables such as (a) sex (log-rank test: p = 0.12) and (b) age (log-rank test: p = 0.000). Tick marks indicate censored data.

3. Modelo paramétrico

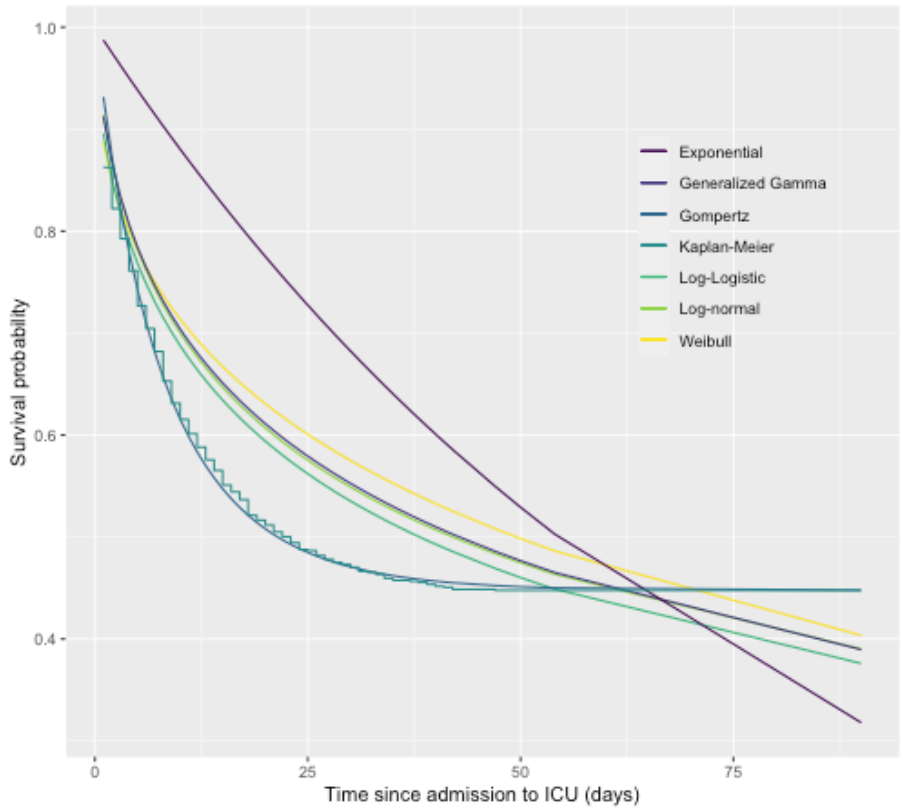


Figura S2: Parametric survival models for critically ill patients with COVID-19. Cumulative survival rate a 90 days. Parametric estimates are compared with the non-parametric estimate, *i.e.*, Kaplan-Meier estimator. (The step function corresponds to the Kaplan-Meier non-parametric estimator).

Cuadro S4: Akaike Information Criterion and Bayesian Information Criterion for Parametric Model Selection

	AIC	BIC	LRT
Weibull	5667.16	5677.16	-2831.58
Log-normal	5506.72	5516.73	-2751.36
Generalized Gamma	5533.54	5548.54	-2763.77
Log-logistic	5564.40	5574.40	-2780.20
Gompertz	5208.52	5218.60	-2602.26
Exponential	6352.83	6357.83	-3175.41

AIC = Akaike Information Criterion. BIC: Bayesian Information Criterion (or Schwarz Criterion). LRT: Log-likelihood Ratio Test.

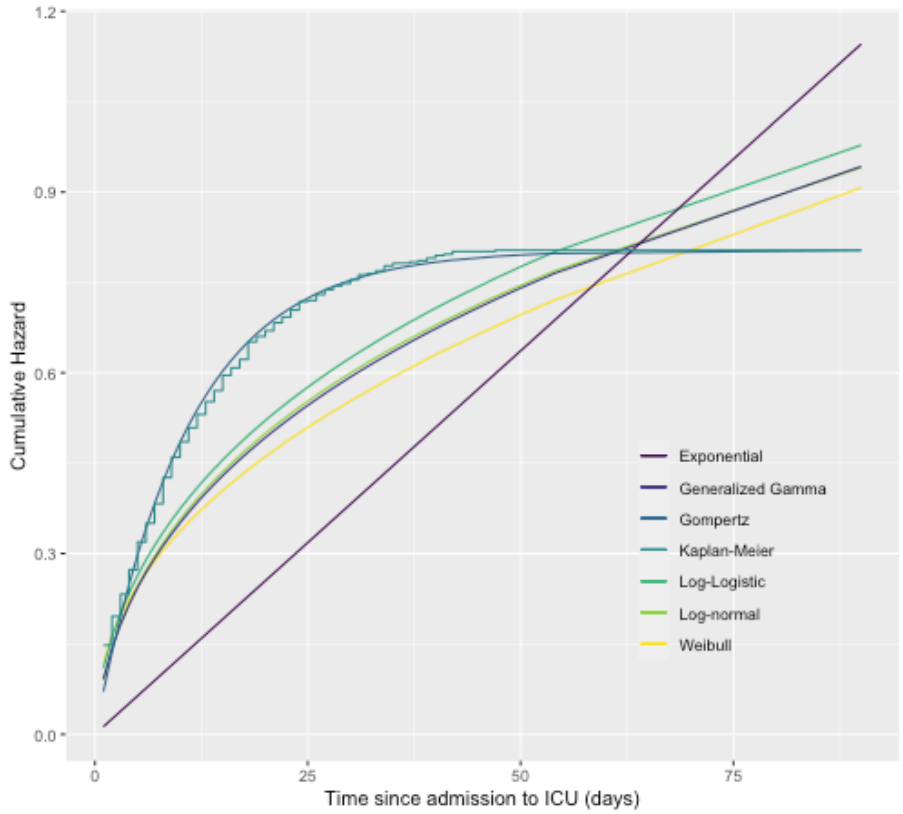


Figura S3: Parametric cumulative hazard models for critically ill patients with COVID-19. Cumulative hazard rate. Parametric estimates are compared with the non-parametric estimate, *i.e.*, Kaplan-Meier estimator. (The step function corresponds to the Kaplan-Meier non-parametric estimator).

4. Modelo de riesgos proporcionales de Cox

Cuadro S5: Multivariate Cox model for risk factors associated with ICU mortality of critically ill patients with COVID-19 (Age [years] as a continuous variable)

	HR (95 % CI)	*p-value*
Sex (Male vs. Female)	1.0857 (0.9164 – 1.2862)	0.3417468
Age, an additional year	1.0345 (1.0279 - 1.0412)	$< 0{,}001^{***}$

HR = Hazard Ratio. *95 % CI* = Confidence Intervals at the 95 % confidence level. *P-value* = P-value of Wald's test statistics. $^{***}p - value < 0{,}01$, $^{**}p - value < 0{,}05$, $^{*}p - value < 0{,}1$

Cuadro S6: Multivariate Cox model for risk factors associated with ICU mortality of chronic critically ill patients with COVID-19 (Age [years] as a continuous variable)

	HR (95 % CI)	*p-value*
Sex (Male vs. Female)	1.1564 (0.6926 - 1.9309)	0.5785
Age, an additional year	1.0478 (1.0265 - 1.0695)	$< 0{,}001^{***}$

HR = Hazard Ratio. *95 % CI* = Confidence Intervals at the 95 % confidence level. *P-value* = P-value of Wald's test statistics. $^{***}p - value < 0{,}01$, $^{**}p - value < 0{,}05$, $^{*}p - value < 0{,}1$

Cuadro S7: Multivariate Cox model for risk factors associated with ICU mortality of non-chronic critically ill patients with COVID-19 (Age [years] as a continuous variable)

	HR (95 % CI)	*p-value*
Sex (Male vs. Female)	1.0966 (0.9163 - 1.3124)	0.3145
Age, an additional year	1.0298 (1.023 - 1.0366)	$< 0{,}001^{***}$

HR = Hazard Ratio. *95 % CI* = Confidence Intervals at the 95 % confidence level. *P-value* = P-value of Wald's test statistics. $^{***}p - value < 0{,}01$, $^{**}p - value < 0{,}05$, $^{*}p - value < 0{,}1$