its associates variables in two age ranges incidence i n the intensive care





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serving both as a marker of: form of acute brain dystunction, DELIRIUM, the most common

PERMANENT COGNITIVE DAMAGE A POTENTIAL MECHANISM FOR WITH DECREASED RESERVE **BRAIN VULNERABILITY**

was carried out in two age groups of adulthood and is associated with cognitive impairment, which is why our study As we know, delirium incidence and severity increase with the age,

OBJECTIVE

To study the incidence of delirium, its risk factors and its association with length of hospital stay [LOS] and mortality in two age ranges.

METHODS

from March 1st to May 31st, 2017 observational, cohort study that included all patients admitted This study design was a single center descriptive, prospective.

EXCLUSION CRITERIA

- ICU readmission in less than 48 hours
- Patients with severe neurological or neuropsychiatric pathology.

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Patients who come and / or are transferred to another health care center.

It is a General ICU with medical and surgical patients. (ASSE), Montevideo, Uruguay. Pasteur Hospital, Assistance of State Health Services

237 patients

72 excluded recressed 72 excluded hours in

232 patients

1 excluded syntrese 3 excluded comingfrom FIGURE 1 Flowchart

INCLUSION CRITERIA

ICU stay longer than 24 hours 50 years old and older.

We divided the population into two groups:

146 patients included	+	Depulation with Spopulation (65 years old
1		
92 patients	+	2 population with 65 years old and older



228 patients 206 CAN ICU was applied 225 RASS was applied 78 excluded recretegic persisten

STATISTIC ANALYSIS

- Define demographic and clinical variables using descriptive statistics, continuous variables using means and SD or medians, depending on the distribution of the data
- The comparison between delirium and non-delirium for continuous variables was performed using the Student's test for independent samples for normally distributed data or Mann-Whitney test or if they do not meet the previous condition, and by the tests x2 or Fisher's test for qualitative variables. The normality of the variables was tested by the Kolmogorov-Smirnov test.
- In the determination of risk factors associated with the development of delirium, an univariate analysis was performed in the first instance. Values < 0.05 were considered significant
- The variables that were significant in the univariate analysis and the variables with p <0.20 clinically relevant, were used for the multivariate analysis by logistic regression.

The results of multivariate analysis were expressed as odds ratios with 95% confidence intervals. The software used for all the calculations was SPSS (State Corp.1P, version 13)

WITH 50 YEARS OLD AND OLDER D

TABLE 2 Multiple logistic regression model using delirium as dependent variable in patients RESULTS

TABLE 3 Multiple logistic regression model using ICU mortality as dependent and old

Cander
Male, Ir (%)

Baseline characteristics and clinical outcomes by delirium status in patients 50 years old and older

Medical history, σ (%) Disease severity

% 09 88

53 (9)

72 (11)

<0.00

50 years old and older

Non - Delirium | Delirium | D valu

93 [63 %]

10 (85 %) H4 [S0 %] 0.32

0.39

ou year a uru ariu uruer	Inci			valiable ili palielli s ou years ulu aliu uluel	SIIII	on years	Ianin niip nin
variables	multiva	multivariate analysis	Sis	variables	multiva	multivariate analysis	sis
	呈	p value	95% CI		물	p value	95% CI
Age	1.109	0.0001	[1.052 - 1.168]	Age	124	0.088	[628.1 - 966.0]
Alcohol consumption	4.88	< 0.013	[1.397 - 1.704]	Sedation days	2.57	0.053	[0.989 - 6.690]
A PACHE II	1.09	0.039	[1.004 - 1.183]	NV days	ಜ	0.017	[1.162 - 4.530]
The logistic regression model using delirium as a dependent warfable, revealed that age, also be consumption and PPRONE II were independent variables associated to defirium development in the patients over 50 years old.	odel using ge, alcoho es associa s old.	delirium as I consumpti ted to deliriu	a dependent on and APACHE II m development in	noted attention where 2. In the bigistic repression model using 160 mortality as a dependent variable we found that: 86 COR 1.24 = 0.083 NV DOYS OR 2.3 = 0.017	nariable v	nodel using I ve found that	CO mortality t:

variables multivariate analysis	in patients 50 years old and older	using hospital mortality as dependent variable	TARIEA Multiple Indictic repression model		che paciente orer au gears aiu.	the national areas all money old	well-dure, revealed translables associated to deliving development in	uariahla pagadal that are alrehal consumption and DOOR III	The legisle proposed or model union delining as a demandant
a small sample.	mortality with an $0R$ 6.04 p = 0.006 , but it was not significant in the multivariate analysis. Perhaps it was	we would also like to mention that delivium was a significant variable in the univariate analysis to ICU	were independent variables associated to ICU mortality.	SEDATION DAYS OR 2.57 p=0.053	MV DAYS OR 2.3 p= 0.017	AGE OR 1.24 p= 0.055	as a dependent variable we found that:	In the logistic regression model using ICU mortality	Inducted only variables with p < 0.2

MV days (so) Mehanical Ventilation

Ī 18 [21 % 48 (46 % 20 (47 %

isease stratification

17 [6] 3[15%] 14 (50%

(S)

42 [29 % 42 [7] MI 72 [49 %]

22 SS 53 % 57 [79 %]

IIIII)

-(IIII)* 0.098

edation days median reen (30) | 8 (1-8) halgesia days median (80)

[1:3]

26 [18 %]

3[15%]

23 [88 %]

Hospital length of stay | 0.805 | < 0.001 | 0.71 - 0.90

1.329

1.06 - 1.68

Besides, it is important to emphasize that patients with delirium are 6 times more likely to die in the IGU than patients without delirium.

ients we found sig	he univariate ana	
nificant relation	lysis when compa	
between hospital mo	ering dead patients v	
ortality and:	vs non dead	

An mance accompance to mechanism raintity.		mortality as dependent variable revealed that MV	The model of logistic regression using hospital	
			E	
age	 WV days 	W	tients we	EAIUN aun
 APACHE II 	 hospital length of stay 	 ICU length of stay analgesia days 	found significant relation	riate analysis when compa
 Delirium 	 sedation days 	 analgesia days 	patients we found significant relation between hospital mortality an	Ran inni sa sujaned nean filisi

Age | ICU length of stay | Apache II | MV | MV days | Analges

TABLE

2 POPULATION 65 YEARS OLD AND OLDER

III III III III III III III III III II	Signs in ha	allellis bo yea	ueiii iuiii siai us iii paileii is oo yeal s uu aliu uluei	Ian
Variables	All patients N=92	Non- Delirium N=30 (32%)	Delirium N=62 (68%)	p value
Mg mean (SO)		73 (6)		0.013
Male of (%)	S3 (S7%)	19 (36 %)	34 (84%)	
Medical history, o (%)				
Tobacco use	SS (S9 %)	20 (36 %)	35 [54 %]	0.37
Psychiatric disorder	7 [7 %]	1[18 %]		0.42
Disease sewerity				
APACHE II score mear(so)		18 [8]	27[9]	<0.001**
Disease stratification				
Medical	65 [70 %]	21 [32 %]	14 [88 %]	_
Surgical	27 [29 %]	9 [33 %]	18 [67 %]	
Mehanical Ventilation	(% 64) 64	\$ [10%]	14 (90%)	<0.001**
MV days (80)		1[2]	7[9]	<0.001**
Hospital LOS (so)		19 [13]	26 [23]	0.093
Analgesia days median (81)		Ē	3 =	<0.001**
Sedation days median neen (80)		=	2	<0.001**
Mortality				
In ICU, π [%] In hospital, π [%]	16 [17%] 21 [23 %]	1[4 %]	15 [94 %] 20 [96 %]	0.017***
Manasayensad na The NTN, manas (Strabel and Anidaled, Tr). Stated to all for independent complex, [**] have Whiten for independent complex, [**] as the Manadalays Lab, the partners in minute the USE Kills masked by paid was a national and	rd desiables). [*] Stadest text I SM ICO was end applied were e	or independent semples, [**] We of included	m Whitey for independent some	Mrs. [***] 11
In the Univariate analysis when comparing delirium patients with non we found significant relation between delirium and:	when comparing on between delir	delirium patients ium and:	with non delirium	de lirium patients

		5
		Baseline delirium
	All patients N=92	aseline characteristics and clinical outcomes by laseline status in patients 65 years old and older
73 (6)	Non- Deliriu N=30 (32%	stics and c atients 65
77 [7]	um Deliriu N=62 (dinical out years old
0.013	m p valı 68%)	tcomes by and older

in patients older than 65 years old and older model using delirium as dependent variable

variable in patients 65 years old and older model using ICU morfality as a dependent

TABLE 7 Multiple logistic regression

TABLE 6 Multiple logistic regression

APACHEII 1.11 0.05 [0.999·1.245]

MV days

2.8 0.37 148

0.021 0.012 ... #

ICU length of stay

The logistic regression model using IEU mortality as a dependent variable revealed that age, IEU, length of stay and MV days were independent variables associated to IEU.

mortality in patients 68 years old and older.

1.92

[1.060 - 1.340]

IIIIIIII	ordine nine	ueiii iuiii sidius iii palieiiis oo yedis uu diiu uiuei	al S UIU dilu C	inci
Variables	All patients N=92	Non- Delirium N=30 (32%)	Delirium N=62 (68%)	p value
Mg mean (SO)		73 [6]	77 [7]	0.013
Gend er				
Male, n (%)	83 [87%]	19 [36 %]	34 [64 %]	0.8
Medical history, a (%)				
Tobacco use	58 [59%]	20 (36 %)	35 (64 %)	0.37
PSychiatric disorder	[0,1]	[1070]	[82 7 <u>)</u>	24.0
APACHE II score mean(80)		[8] 81	27(9)	<0.001**
Disease stratification				
Medical Surgical	65 [70 %] 27 [29 %]	9 (33 %)	18 (67 %) 18 (67 %)	_
Mehanical Ventilation	(% 64) 64	\$ (10%)	14 (90 %)	<0.001**
MV days (so)		1[2]	7 [9]	<0.007**
Hospital LOS (so)		19 [13]	26 [23]	0.093
Analgesia days median (so)		Ē	3 (4)	<0.001**
Sedation days median reen (80)		8	23	<0.001**
Morbility				
In ICU, π [%] In haspital, π [%]	16 [17%] 21 [23 %]	1[4%]	15 (94 %) 20 (96 %)	0.017***
Most suppressed as the $\mathbb{R}[N]$ mass (SE) the start familia $\mathbb{R}[N]$ Stated test for hedge start stropher. [**] Most White $\mathbb{R}[n]$ is dependent sumpler, [***] to be the distributed by the start of the Medical Little, the potential is when the GM EU mass at a pole of over each installed.	rd desiables). [*] Stadest text ! 300 KU was est applied were e	for independent samples, [**] Ma at included	nn White oy far in day on de of so o	11 [***]
In the Univariate analysis when comparing delir ium patients with non delirium patients we found significant relation between delirium and:	when comparing on between delir	delirium patients ium and:	with non deliriu	n patients
- INII -				

sia days Sedation days	ith non delirium patients	Widely for independent samples, (***) as		15 (80 %)	2 [3] <0.001**		7 (9) < 0.001**	44 [90 %] <0.001**	18 (67 %)	uu(68%)	27(a)	
slep	strain	=	0.001***	n m7***	11**	*	3 0	9**			-	
that nospital mortality was sa ss in cellirium group vs a ss delirium (p=0.001).	When comparing delirium group with non delirium group	Harnital mantality in nationals adden than 60 was 22s. (21)	REGARDING DELIRIUM AND HOSPITAL MORTALITY IN PATIENTS	ICU mortality was 6/92 [6 %] patients, 15/28 [5 4%] in deliri Hospital mortaliy was 33/105 [31 %], 20/33 [61 %] in deliri	REGARDING DELIRIUM IN 65 YEARS OLD AND OLDER:	The Hospital mortaliy was 33/105 (31%), 20/33 (61%) in delirium patients.	The ICU mortality was 6/92 (6 %) patients, 15/28 (54 %) in delirium patients.	The incidence of delirium was 62/92 (57 %). In MV patients was 44/49 (90 %).	The population was divided into delirium group and non deli	Patients older than 65 years old were 92, 41% of the total	RESULTS OF THE POPULATION 65 YEARS OLD AND OLDER	

Patients older than 65 years old were 92, 41% of the total population	RESULTS OF THE POPULATION 65 YEARS OLD AND OLDER	The logistic repression model using delinion as a dependent variable, revealed that age and DROBERT II were independent variables associated to delinion development in the patients were 65 years old.

Delirium was a significant veriable in the univeriate analysis to EU morbality with an OB 9.25, with p = 0.036, but it was not in the multiversite analysis. Patients with defirium are 9 times Perhaps it was a small sample. Patients with defirium ore 9 times more likely to die in the ICU compared to those without defirium.

IABLE 8 Multiple logistic regression model

MV an indepe	% (21 patients). group we found vs 5% without	in delirium patients. n delirium patients. TIENTS OLDER	
MV and LOS were independent risk	materican enterempi et st. In the lightly free form model using hospital marchithy as dependent reseable, we form of that I stept to it stay and III days were independent risk features to hospital marchithy in patients 65 years old and ofder.	MV days Hospital length of stay	using hospital mortality as dependent variable in patients 65 years old and older variables multivariate analysis
REFERENCES Where P, Proviginan L, Diller S., Fave of to Devilland ML, Lour G, — & Foly L (2017). Devilland	odel usi Id that I ors to ho	1.4 0.78	ality a old a
	ng hespital EU length o spital mort	0.013 0.002	lity as dependent old and older multivariate analysis
	mortality as f stay and NV days ality in patients 68	[1.074 - 1.825] [0.666 - 0.915]	dent variable lysis

ICU MORTALITY was ${\bf 20}$ / 146 (13%) ,17 / 20 (85%) with defirium (p=0.003). HOSPITAL MORTALITY was ${\bf 3}$ / 78 (14%) and ${\bf 23}$ / 78 (30%) in delirium patients. (p<0.001) In the Universide analysis when comparing **delivium patients** with **non delivium patients** we found significant relation between delivium and: Age | iCU | tength of stay | Apache II | MV | MV days | analyesia days | sedation days

- Multiple logistic regression model using delirium as the dependent outcome variable revealed that age and APACHE II were independent variables associated with the development of delirium in both groups.
- The history of alcohol consumption was an independent risk factor only for patients with 50 years old and older.
- The multiple logistic regression model using hospital mortality as the dependent outcome variable showed that MV days and LOS were independent predictors for Hospital mortality in both groups.

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