TARV en UCI. ¿Es posible?

Macarena Vidal

Historia clínica UCI

36 años, sexo femenino, procedente de Rocha

AP: hipotiroidismo en tratamiento
colecistectomizada
pareja serodiscordante conocida(VIH +)

FI a UCI: 31/3/10

MI: Neumopatía bilateral con insuficiencia respiratoria severa

AEA:

- Un mes previo a ingresar : marcada repercusión general (astenia, adinamia, anorexia, adelgazamiento)
- Agrega 10 días antes de ingreso tos mucosa, fiebre diaria y disnea progresiva por lo que consulta en Rocha

Se realiza DG de Neumonia bilateral
1º Test de ELISA reactivo para VIH

- En sala rápida peoria, instala insuficiencia respiratoria severa por lo cual se traslada a UCI

Al ingreso:

- Paciente adelgazada, vigil , SCG 15, relleno capilar lento, saturación de pulso 02 82% con MBF/R
- Piel y mucosas: leucoplasia vellosa oral .
- Ex PP: estertores crepitantes bilaterales en tercios inferiores pulmonares

De la paraclínica se destaca

UREA	0.67
CREA	0,66
HB	10,4
GB	2500
LINF TOTAL	500
PTQ	210.000

Na	132
K	3.4
LDH	1740
Antígeno Neumococo en orina	(-)

En Suma: 36 años

Elementos de inmunodepresión severa

Neumopatía sub aguda grave

Con insuficiencia respiratoria severa

Elisa reactivo

PLANTEOS DE UCI:

- **Debut de VIH en estadío SIDA**
- **Neumopatía con etiología:**
  1) **PCP**
  2) **NAC a inespecíficos**
  3) **Mas alejado TB**

Tratamiento inicial:

- Sostén de funciones
- Antibioticoterapia empírica
- Ventilación no invasiva

- Se solicita:
  - Cultivo de secreciones, HC, UC
  - FBC con LBA
  - Estudios imagenológicos
  - Confirmatorio de VIH

VNI
PAFI 185 200

Ingreso UCI

WB VIH reactivo

31/3

3/4

9/4

Inicia TMP/SMX Corticoides VNI

Se agrega Ampicilina Sulbactam Y Claritromicina

EVOLUCIÓN I

- Tórpida con imposibilidad de destete de VNI
- Persiste febril
- No se realiza FBC por IR ni TC de tórax
- 15/04: instala diarrea sin elementos anormales, alta tasa, con repercusión (disionías)
- Agrega shock con requerimiento de inotrópicos
- **20/4: Hemorragia alveolar**

  Peoría de Insuficiencia respiratoria

  IOT + ARM

VNI
PAFI 185 200 iOT 100 300 450

Ingreso UCI

31/3

Planteos de:
Infección nosocomial (MOMR)
Otras EO: TB, hongos

Se amplia plan A
MO INESP
MICOBAC
HONGOS

K. pneumoniae en AT 18/4

Inicia TMP/SMX Corticoides VNI

Se agre
Ampicili
Sulbacta
Y
Claritromi

Meropenem
Anti TB
Anti MAI
Anfotericina B

Evolución II

- *K. pneumoniae* en AT
- FBC 22/4 : IFI negativa para PCP

  Baciloscopías negativas
- TC Tx : consolidaciones pulmonares extensas bilaterales.
- Mejoría del intercambio gaseoso y de estado hemodinámico, defervescencia de la fiebre.
- Persiste con diarrea con alta tasa

Evolución III

6/5 (36 días en UCI):

Reitera hemorragia alveolar
Anemia aguda, nuevo deterioro del intercambio gaseoso Shock
Inotrópicos, volumen, transfusión GR
Paciente extremadamente grave

SE MANTIENE CONDUCTA
_Sotén de funciones
_Antimicrobianos con amplia cobertura

Evolución IV

- Mejoría del intercambio gaseoso, no reitera sangrados, se mantiene en apirexia, sin leucocitosis.
- Persiste con diarrea
- Coprocultivos y coproparasitarios negativos
- Toxina para *Clostridium difficile* negativas
- FCC y FGC: no lesiones macroscópicas

INICIO TARV?

Dado el gran deterioro inmunológico
en una paciente VIH estadío SIDA, con al menos dos EO, que persiste con diarrea incontrolable con trastornos iónicos
Se plantea inicio de TARV como la medida principal efectiva con impacto en sobrevida
para control de eventuales EO actuales y futuras

PLANTEOS ?:

_CMV
_Parásitos intestinales
_LNH
_Mycobacterias
_Enteropatía por VIH

Se solicita: Fondo de ojo s/p
Se reclama biopsia FGC y FCC

Biopsia duodeno
Microsporidium
y biopsia de
Colon
Criptosporidium parvum

Evolución V

- 2/6
- 63 días en UCI
- Nuevamente deterioro oximétrico, polipnea de 38 pm.
- Ascenso de leucocitosis y fiebre.

Planteos DG:

¿NAV?

¿SIRI?

Se inicia colistina
+
corticoterapia

VNI
PAFI

X
350

44 días en UCI

Biopsia duodeno *Microsporidium* y biopsia de Colon *Criptosporidium parvum*

SIRI?
NAV?

Ronda bacteriológica negativas

14/5

20/5

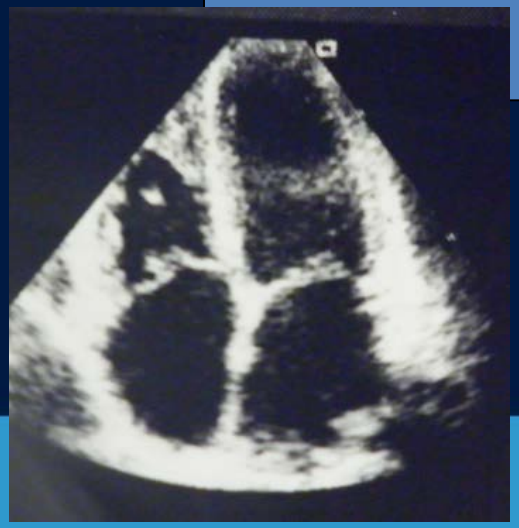
2/6

Inicio TARV

Albendazol y azitromicina

Colistina i/v
Y
Nebulizada

corticoterapia



Evolución VI

- Mejoría
- En apirexia
- Se extuba con buena tolerancia
- Cumple 14 días de tratamiento para NAV
- Mejoría de diarrea.

- Egresa de UCI 30/6 a sala de medicina

- Ingresa SEIC 5/7/10
- Del ingreso paciente mal estado general desnutrición proteico calórico, hipocoloreada
- Ulcera por presión sacra
- A dos meses de TARV
- VHC, VHB Y VDRL negativo
  Carga viral 307 copias/ml
  CD4 362

- Se realiza rehabilitación motora con Fisioterapia
- Paciente con buena evolución se otorga alta a domicilio

Control en policlínica

Fecha	Carga viral	PL CD4	TARV
12/5/10	500000 (5,79)		ABC/3TC EFV
7/7/10	307 (2,48)	362	´´
13/10/10	1725 (3,23)	467	´´
9/3/11	5423 (3,3)	355	´´
9/6/11	5706 (3,75)	312	´´

Test de Resistencia

Mutaciones de RT asociadas a resistencia: L74V, L100I, K103N, M184V*

Inhibidores nucleosídicos y nucleotídicos de la RT	Interpretación de las resistencias
abacavir (ABC)	Resistencia
didanosina (ddI)	Resistencia
lamivudina (3TC)/emtricitabina (FTC)	Resistencia
estavudina (d4T)	No hay pruebas de resistencia
tenofovir (TDF)	No hay pruebas de resistencia
zidovudina (AZT)	No hay pruebas de resistencia

Inhibidores no nucleosídicos de la RT	Interpretación de las resistencias
efavirenz (EFV)	Resistencia
etravirina (ETR)	*Posible resistencia*
nevirapina (NVP)	Resistencia

Mutaciones de PR asociadas a resistencia: K20R, M36I

Inhibidores de la proteasa	Interpretación de las resistencias
atazanavir (ATV)	No hay pruebas de resistencia
ATV/r **	No hay pruebas de resistencia
darunavir + ritonavir (DRV/r)	No hay pruebas de resistencia
fosamprenavir (FPV)	No hay pruebas de resistencia
FPV/r **	No hay pruebas de resistencia
indinavir (IDV)	No hay pruebas de resistencia
IDV/r **	No hay pruebas de resistencia
lopinavir + ritonavir (LPV/r)	No hay pruebas de resistencia
nelfinavir (NFV)	No hay pruebas de resistencia
saquinavir + ritonavir (SQV/r)	No hay pruebas de resistencia
tipranavir + ritonavir (TPV/r)	No hay pruebas de resistencia

** Inhibidores de la proteasa administrados con ritonavir en dosis bajas como refuerzo farmacológico.

TEST RESISTENCIA

- Se cambia plan por test resistencia a

TNF / 3TC - LVP Rit

20/1/12 inicia nuevo plan TARV

Fecha	Carga viral	PL CD4	TARV
20/1/12			TNF / 3TC - LVP Rit
11/4/12	50	466	´´
			´´

inicio

Conclusiones

- ✓ Paciente extremadamente grave.
- ✓ Internación prolongada en UCI (90 días)
- ✓ Debut de VIH con severa inmunodepresión y carga viral muy elevada.

Conclusiones

- ✓ Que presentó varias infecciones oportunistas simultáneas o sucesivas (algunas confirmadas)

A Probable neumonía a Pneumocistis

Probable asociación lesional con micosis o micobacterias

Diarrea a → *Microsporiduim*
→ *Criptosporidium parvum*

Conclusiones

B Probable SIRI que determinó evolución a la gravedad y re intubación orotraqueal

C Dos infecciones nosocomiales

Neumonia asociada a ventilador a *Klebsiella spp*

Eventual neumonia a MO multiresistentes

D Resistencia primaria a AZT 3TC EFV

E Actualmente excelente evolución y del estado general, con carga viral indetectable y con CD4 en ascenso

Benefit of antiretroviral therapy on survival of human immunodeficiency virus-infected patients admitted to an intensive care unit

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Objective: To evaluate the impact of antiretroviral therapy (ART) and the prognostic factors for in-intensive care unit (ICU) and 6-month mortality in human immunodeficiency virus (HIV)-infected patients.

Design: A retrospective cohort study was conducted in patients admitted to the ICU from 1996 through 2006. The follow-up period extended for 6 months after ICU admission.

Setting: The ICU of a tertiary-care teaching hospital at the Universidade de São Paulo, Brazil.

Participants: A total of 278 HIV-infected patients admitted to the ICU were selected. We excluded ICU readmissions (37), ICU admissions who stayed less than 24 hours (44), and patients with unavailable medical charts (36).

Outcome Measure: In-ICU and 6-month mortality.

Main Results: Multivariate logistic regression analysis and Cox proportional hazards models demonstrated that the variables associated with in-ICU and 6-month mortality were sepsis as the cause of admission (odds ratio [OR] = 3.16 [95% confidence interval [CI] 1.65–6.06]); hazards ratio [HR] = 1.37 [95% CI 1.01–1.88]), an Acute Physiology and Chronic Health Evaluation II score >19 [OR = 2.81 (95% CI 1.57–5.04); HR = 2.18 (95% CI 1.62–2.94)], mechanical ventilation during the first 24 hours [OR = 3.92 (95% CI 2.20–6.96); HR = 2.25 (95% CI 1.65–3.07)], and year of ICU admission [OR = 0.90 (95% CI 0.81–0.99); HR = 0.92 [95% CI 0.87–0.97)]. CD4 T-cell count <50 cells/mm^3 was only associated with ICU mortality [OR = 2.10 (95% CI 1.17–3.76)]. The use of ART in the ICU was negatively predictive of 6-month mortality in the Cox model [HR = 0.50 (95% CI 0.35–0.71)], especially if this therapy was introduced during the first 4 days of admission to the ICU [HR = 0.58 (95% CI 0.41–0.83)]. Regarding HIV-infected patients admitted to ICU without using ART, those who have started this treatment during ICU stay presented a better prognosis when time and potential confounding factors were adjusted for [HR 0.55 (95% CI 0.31–0.98)].

Conclusions: The ICU outcome of HIV-infected patients seems to be dependent not only on acute illness severity, but also on the administration of antiretroviral treatment. (Crit Care Med 2009; 37: 1605–1611)

KEY WORDS: intensive care; human immunodeficiency virus; acquired immunodeficiency syndrome; antiretroviral therapy; prognostic factors; critical care; mortality

Critical Illness in HIV-Infected Patients in the Era of Combination Antiretroviral Therapy

Kathleen M. Akgün[1,2], Laurence Huang[3], Alison Morris[4], Amy C. Justice[1,5], Margaret Pisani[2], and Kristina Crothers[6]

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ART Initiation in the ICU: IRIS

Among patients who are newly initiated on ART in the ICU, IRIS may complicate care (54, 55). Despite the risks of developing IRIS, evidence in non–critically ill HIV-infected patients now favors the early initiation of ART among most patients with acute opportunistic infections. In a randomized, controlled trial of patients admitted with nontuberculosis opportunistic infections (63% due to PCP), Zolopa and colleagues showed that early initiation of ART within 14 days of beginning treatment for the opportunistic infection lessened AIDS progression or death without an associated increase in adverse events when compared with delayed initiation of ART a median of 45 days after completing treatment for the opportunistic infection (48). In a study of HIV-infected patients with tuberculosis, mortality was also significantly lower among those started on ART during treatment for tuberculosis rather than delaying ART until treatment was complete (56). However, these studies did not include patients who were critically ill, on mechanical ventilation, or with multiorgan failure.

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Manifestations of IRIS that can result in critical illness include pneumonitis, meningitis, hepatitis, and pericarditis. Respiratory failure secondary to IRIS is most often associated with tuberculosis and PCP (57, 58). IRIS associated with PCP can mimic acute respiratory distress syndrome, with fever, worsening hypoxia, and alveolar opacities on chest radiograph. Central nervous system involvement from tuberculosis and cryptococcus may also complicate IRIS and can be associated with significant morbidity and mortality (54, 59). Risk factors for IRIS include starting ART in close proximity to treatment for an acute opportunistic infection (60, 61), lower CD4 cell counts at the time of ART initiation (61, 62), rapid decline in HIV RNA after initiation of ART, and the use of boosted protease inhibitors (these inhibit intestinal and hepatic metabolism of other protease inhibitors, thus increasing drug exposure, plasma concentration, and drug half-life) (63). The pathogenesis of IRIS remains incompletely understood. In general, ART can be continued, although a careful review on a case-by-case basis is required. In patients who have potentially life-threatening manifestations of IRIS due to severity or location of the inflammatory response, it may be prudent to interrupt ART. Nonsteroidal anti-inflammatory agents and corticosteroids can be used to decrease inflammation, particularly in more severe cases.

Short- and long-term outcomes of HIV-infected patients admitted to the intensive care unit: impact of antiretroviral therapy and immunovirological status

Annals of Intensive Care 2012, **2**:25 doi:10.1186/2110-5820-2-25

Abstract

Background

The purpose of this study was to assess the short- and long-term outcomes of HIV-infected patients admitted to intensive care units (ICU) according to immunovirological status at admission and highly active antiretroviral therapy (HAART) use in ICU.

Methods

Retrospective study of 98 HIV-infected patients hospitalized between 1997 and 2008 in two medical ICU in Montpellier, France. The primary outcome was mortality in ICU. The secondary end point was probability of survival in the year following ICU admission.

Table 1. General characteristics of the 98 HIV-infected patients admitted to the ICU

Variable (n, %)		Total (n = 98)	Survived the ICU (n = 62)	Died in the ICU (n = 36)	*p* value
Age, yr (mean ± SD)		43.1 ± 10.7	43.2 ± 10.6	42.9 ± 10.9	0.815
Males		69 (70.4)	44 (71)	25 (69.4)	0.873
Comorbidities					
Diabetes		10 (10.2)	8 (12.9)	2 (5.6)	0.316
HBs Ag-positive		14 (14.3)	8 (12.9)	6 (16.7)	0.607
Anti-hepatitis C virus positive		30 (30.6)	16 (25.8)	14 (38.9)	0.175
Alcohol abuse		29 (29.9)	18 (29.0)	11 (31.4)	0.804
Smoking		30 (30.9)	23 (37.1)	11 (31.4)	0.08
Main reason for ICU admission					
Acute respiratory failure		38 (38.8)	24 (38.7)	14 (38.9)	0.888
Sepsis		11 (11.2)	6 (9.7)	5 (13.9)	0.57
Severe neurologic disorders		25 (25.5)	15 (24.9)	10 (27.8)	0.542
Miscellaneous		24 (24.4)	17(27.4)	7 (19.4)	-
Type of diagnosis at ICU admission					
	Opportunistic infection	25 (25.5)	16 (25.3)	9 (25.7)	
	Severe bacterial infection	36 (36.7)	22 (34.9)	14 (40)	
Related to HIV	HAART-induced complications	6 (6.1)	5 (7.9)	1 (2.8)	0.975
	Non infectious disease related to HIV	15 (15.3)	7 (11.1)	8 (22.8)	
	Total	82 (83)	50 (79.3)	32 (91.4)	
Unrelated to HIV		16 (16.3)	13 (20.7)	3 (8.6)	0.169

Table 1. General characteristics of the 98 HIV-infected patients admitted to the ICU

Variable (n, %)	Total (n = 98)	Survived the ICU (n = 62)	Died in the ICU (n = 36)	*p* value
Details of opportunistic infection at the admission				
Pneumocystis jirovecii pneumonia	11 (11.2)	6 (9.7)	5 (13.9)	
Tuberculosis	1 (1)	0	1 (2.8)	
Cerebral toxoplasmosis	6 (6.1)	5 (8.1)	1 (2.8)	-
Cryptococcosis	3 (3.1)	2 (3.2)	1 (2.8)	
Others	4 (4)	3 (4.8)	2 (5.6)	
No opportunistic infection	73 (74.5)	46 (74.2)	27 (75)	0.621
Life-supporting procedures in ICU				
Mechanical ventilation during the 24 first hours	59 (60.2)	28 (45.2)	31 (86.1)	<0.001
Duration of mechanical ventilation, days (mean ± SD)	9.59 ± 17.0	7.61 ± 15.4	13 ± 19.4	0.003
Renal replacement therapy	15 (15.3)	7 (11.3)	8 (22.2)	0.147
Duration of renal replacement therapy, days (mean ± SD)	1.7 ± 6.4	1.3 ± 5.3	2.3 ± 8.1	0.37
Vasopressors	51 (52)	21 (33.9)	30 (83.3)	<0.001
Duration of vasopressors, days (mean ± SD)	3.8 ± 6.6	2.6 ± 4.5	5.9 ± 8.8	<0.001
Length of stay in ICU, days (mean ± SD)	14 ± 17.5	13.4 ± 16.1	15.0 ± 19.9	0.431
Severity score (at 24 h)				
SAPS II (mean ± SD)	53.8 ± 20.7	46.5 ± 13.5	66.2 ± 24.9	<0.001
Biological data at admission				
Albumin, g/L (mean ± SD)	31.1 ± 14.2	32.8 ± 14.8	27.6 ± 12.4	0.125
Lactic acid, mmol/l (mean ± SD)	2.9 ± 2.9	2.1 ± 1.9	4.4 ± 3.9	<.001
Thrombin time, % (mean ± SD)	68.4 ± 22.9	72.5 ± 22	61.6 ± 23	0.034

Table 2. Demographic and baseline clinical characteristics of HIV-infected patients admitted to the ICU, stratified according to immunovirological statuses

Variable (n, %)	Total n = 98	Patients with complete immunovirological status available n = 76 $CD4^{high}$ VL^{high} n = 14	$CD4^{low}$ VL^{high} n = 40	$CD4^{low}$ VL^{low} n = 10	$CD4^{high}$ VL^{low} n = 12	*p* value
Males	69 (70.4)	8 (57.1)	28 (70)	8 (80)	10 (83.3)	0.496
Age, yr (mean ± SD)	43.1 (10.7)	42.2 (8.5)	40.1 (8.7)	46.8 (16.7)	54.7 (10.5)	<0.001
Time since HIV diagnosis						
Less than 6 months	17 (17.3)	1 (7.1)	8 (20)	1 (10)	0 (0)	
Intermediate	14 (14.3)	4 (28.6)	6 (15)	2 (20)	2 (16.7)	0.62
More than 5 years	67 (68.4)	9 (64.3)	26 (65)	7 (70)	10 (83.3)	
HIV diagnosis in ICU	8 (8.2)	0 (0)	6 (15)	0 (0)	0 (0)	0.217
Comorbidities						
HbsAg-positive.	14 (14.3)	3 (21.4)	6 (15)	0 (0)	1 (8.3)	0.532
Anti-hepatitis C virus positive	30 (30.6)	10 (71.4)	7 (17.5)	4 (40)	2 (16.7)	0.001
HbsAg + antihepatitis C virus positive	7 (7.1)	3 (21.4)	2 (5)	0 (0)	0 (0)	0.117
Alcohol abuse	29 (30)	8 (57.1)	13 (32.5)	2 (20)	2 (16.7)	0.137
Tobacco	30 (31)	8 (57.1)	15 (37.5)	1 (10)	3 (25)	0.099
Past medical history of cancer	13 (12.6)	0 (0)	3 (7.5)	4 (40)	2 (16.7)	0.016
Main reasons for ICU admission						
Acute respiratory failure	38 (38.8)	8 (57.1)	16 (40)	2 (20)	3 (25)	
Sepsis	11 (11.2)	1 (7.1)	3 (7.5)	1 (10)	2 (16.7)	0.749
Severe neurologic disorders	25 (25.5)	2 (14.3)	11 (27.5)	4 (40)	3 (25)	
Miscellaneous	24 (24.5)	3 (21.5)	10 (25)	3 (30)	6 (33.3)	
Opportunistic infections						
No opportunistic infection	73	14 (100)	25 (62.5)	10 (100)	11 (91.7)	0.002
Pneumocystis jirovecii pneumonia	11 (11.2)	0 (0)	5 (12.5)	0 (0)	1 (8.3)	
Tuberculosis	1 (1)	0 (0)	1(1)	0 (0)	0 (0)	-
Toxoplasmosis	6 (6.1)	0 (0)	4 (10)	0 (0)	0 (0)	
Cryptococcosis	3 (3)	0 (0)	2 (5)	0 (0)	0 (0)	
Reactivation of cytomegalovirus (antigenemia positive)	15 (15.3)	0 (0)	10 (25)	0 (0)	1 (8.3)	0.054
ICU data						
SAPS II score (median)	49.5	52	48.5	56	49.5	0.522

Table 3. Specific characteristics of the 98 HIV-infected patients

Variables (%)		Total (n = 98)	Survived the ICU (n =62)	Died in the ICU (n =36)	*p* value
HAART					
No past history of HAART		24 (24.5)	16 (25.8)	8 (22.2)	0.669
No HAART at the admission + no introduction in ICU		45 (45.9)	28 (45.2)	17 (47.2)	
No HAART at the admission + introduction in ICU		9 (9.2)	7 (11.3)	2 (5.6)	0.106
HAART active at the admission and pursued		20 (20.4)	16 (25.8)	4 (11.1)	
HAART active at the admission and stopped		24 (24.5)	11 (17.7)	13 (36.1)	
Introducing or pursuing HAART in ICU		29 (29.6)	23 (37.1)	6 (16.7)	0.032
Immunovirological data					
Mean ± SD CD4 (/mm^3) §		173.5 ± 192	176.3 ± 197.1	168.7 ± 185.8	0.701¶
Mean ± SD HIV RNA VL (10^3 copies/ml)¶		274. 8 ± 664.9	282.6 ± 709.5	261.1 ± 591	0.975
CD4^{high} (≥200/mm^3)		30 (32.3)	20 (33.9)	10 (29.4)	0.656
CD4^{low} (<200/mm^3)		63 (67.7)	39 (66.1)	24 (70.6)	
Combined subgroups	CD4^{high} + VL^{high}	14 (18.4)	9 (18.4)	5 (18.5)	
	CD4^{high} + VL ^{low}	12 (15.8)	10 (20.4)	2 (7.4)	0.429
	CD4^{low} + VL^{high}	40 (52.6)	25 (51)	15 (55.6)	
	CD4^{low} + VL^{low}	10 (13.2)	5 (10.2)	5 (18.6)	

§93 patients; ¶77 patients

Table 4. Evolution of ICU mortality, age, and SAPS II score of HIV-infected patients admitted to the ICU

Period	All period n = 98	1997–2000 n = 29	2001–2004 n = 37	2005–2008 n = 32	*p* value
Died in ICU (n, %)	36 (36.7)	13 (44.8)	13 (35.1)	10 (31.2)	0.529
Died before hospital discharge (n, %)	47 (52.8)	13 (44.8)	20 (54.0)	14 (43.7)	0.832
Died at one year* (%)	55	50.4	59.6	52.7	0.843
Age (means, SD)	42.8 ± 10.6	36.1 ± 6.1	44.6 ± 10.1	47.6 ± 11.6	<0.001
SAPS II (means, SD)	53.2 ± 20.3	52.9 ± 25.7	51.7 ± 15.0	56.9 ± 21.5	0.406

In-ICU mortality and 1-year mortality

Thirty-six patients (36.7%) died in the ICU and 12 patients (12.2%) died in the hospital after ICU discharge (Figure 1). From 1997 to 2008, ICU mortality decreased, whereas severity score remained constant and patients were older, but those trends were not significant (Table 4). In univariate analysis, factors significantly associated with ICU mortality were the use of vasopressive agents or mechanical ventilation, the arterial lactic acid value, and the severity scores (SAPS II or APACHE II) at admission. In our study, neither CD4 T-cell count (even for patient with very low cell count as $<50/mm^3$) nor anteriority of HIV diagnosis, viral load, HAART at admission, reason for admission, and immunovirological status were significantly associated with ICU mortality. Introducing or continuing HAART in ICU was significantly associated with a better outcome (Table 3).

After multivariate logistic regression analysis including the SAPS II score, the only independent predictors of ICU mortality were the use of vasopressive agents (OR, 3.78; 95% CI, 1.11-12.86, $p = 0.03$) and the SAPS II score (OR, 1.04; 95% CI, 1.00-1.08; $p = 0.03$), whereas introducing or continuing HAART in ICU was protective (OR, 0.28; 95% CI, 0.08-0.94; $p = 0.04$; Table 5).

Table 5. Univariate and multivariate analysis of variables associated with in-ICU and 1-year mortality

Variables		ICU mortality		One-year mortality	
		Crude odds ratio	Adjusted odds ratio	Crude hazard ratio	Adjusted hazard ratio
		OR [95% CI] *p*	OR [95% CI] *p*	HR [95% CI] *p*	HR [95% CI] *p*
HAART					
No HAART at admission + no introduction in ICU		1.00 [–] -	-	1.00 [–] -	1.00 [–]
No HAART at admission + introduction in ICU		0.471 [0.087-2.533] 0.380	-	0.807 [0.277-2.355] 0.695	0.166 [0.043-0.642] 0.009
HAART active at admission and pursued		0.412 [0.118-1.438] 0.164	-	0.948 [0.446-2.014] 0.889	1.519 [0.519-4.444] 0.446
HAART active at the admission and stopped		1.947 [0.713-5.312] 0.193	-	1.827 [0.963-3.466] 0.065	1.758 [0.633-4.887] 0.279
Introducing or pursuing HAART in ICU		0.339 [0.123-0.937] 0.037	0.278 [0.082-0.939] 0.039	0.72 [0.39-1.33] 0.294	-
Immunovirological status					
CD4 T-cell count <200 /mm^3		1.332 [0.542-3.273] 0.532	-	1.348 [0.73-2.489] 0.34	-
HIV RNA load >1,000 copy/mL		1.153 [0.503-2.645]- 0.737	-	0.935 [0.541-1.616] 0.809	-
Combination	$CD4^{high} + VL^{low}$	1.00 [–] -	-	1.00 [–] -	1.00 [–] -
	$CD4^{high} + VL^{high}$	2.778 [0.428-18.037] 0.857	-	2.736 [0.707-10.594] 0.145	2.344 [0.442-12.434] 0.317
	$CD4^{low} + VL^{high}$	3.000 [0.578-15.583] 0.659	-	2.583 [0.77-8.670] 0.124	5.19 [1.328-20.279] 0.018
	$CD4^{low} + VL^{low}$	5.000 [0.704-35.493] 0.208	-	7.411 [2.02-27.195] 0.002	4.714 [1.178-18.867] 0.028

Table 5. Univariate and multivariate analysis of variables associated with in-ICU and 1-year mortality

Variables	ICU mortality		One-year mortality	
	Crude odds ratio	Adjusted odds ratio	Crude hazard ratio	Adjusted hazard ratio
	OR [95% CI] *p*	OR [95% CI] *p*	HR [95% CI] *p*	HR [95% CI] *p*
Comorbidity				
Hepatitis C virus infection	1.83 [0.760-4.406] 0.178	-	1.469 [0.829-2.603] 0.1879	3.268 [1.29-8.278] 0.012
In-ICU data				
Use of vasoactive drugs	9.762 [3.512-27.132] <0.001	3.779 [1.11-12.861] 0.033	4.2 [2.257-7.815] <0.001	3.68 [1.394-9.716] 0.008
Mechanical ventilation	7.529 [2.585-21.923] <0.001	3.317 [0.955-11.521] 0.059	3.139 [1.64-6.007] <0.001	-
Albumin	0.97 [0.926-1.015] 0.19	-	0.968 [0.937-1.001] 0.058	-
Acid lactic in the first 24 h	1.326 [1.104-1.593] 0.002	-	1.205 [1.109-1.31] <0.001	-
SAPS II	1.06 [1.029-1.091] <0.001	1.04 [1.003-1.077] 0.032	1.065 [1.048-1.084] <0.001	1.09 [1.057-1.124] <0.001

In this study, we observed a high rate of mortality in ICU, a majority of admissions not primarily related to opportunistic infections and only a few discoveries of HIV infection after ICU admission. In this HIV-infected population, we showed that mortality in ICU and during the first year following admission were related to the acute illness severity and immunovirological statuses at ICU admission and that introduction or pursuit of HAART seemed to be associated with a better outcome. The 1-year mortality contrasted with the ICU

Conclusions

In a population of HIV-infected patients admitted to ICU, short- and long-term outcomes are related to acute illness severity and immunovirological status at admission. Complementary studies are necessary to identify HIV-infected patients who benefit from HAART use in ICU according to immunovirological status and the reasons of ICU admission.

La ausencia de evidencia no es evidencia de ausencia

- Evidencia aún no es suficiente
- Recomendaciones cambiantes
- Vinculado a nivel de inmunosupresión
- Vinculado a enfermedad oportunista (TB, PCP, Cryptococosis)
- Pero la evidencia actual apunta a inicio precoz.

Gracias