

# **Viral Hepatitis Prevention Board Meeting**

## **Burden and Prevention of Viral Hepatitis in Portugal**

### **Epidemiology of coinfection (HIV, HCV) in Portugal**

**Rui Sarmiento e Castro**

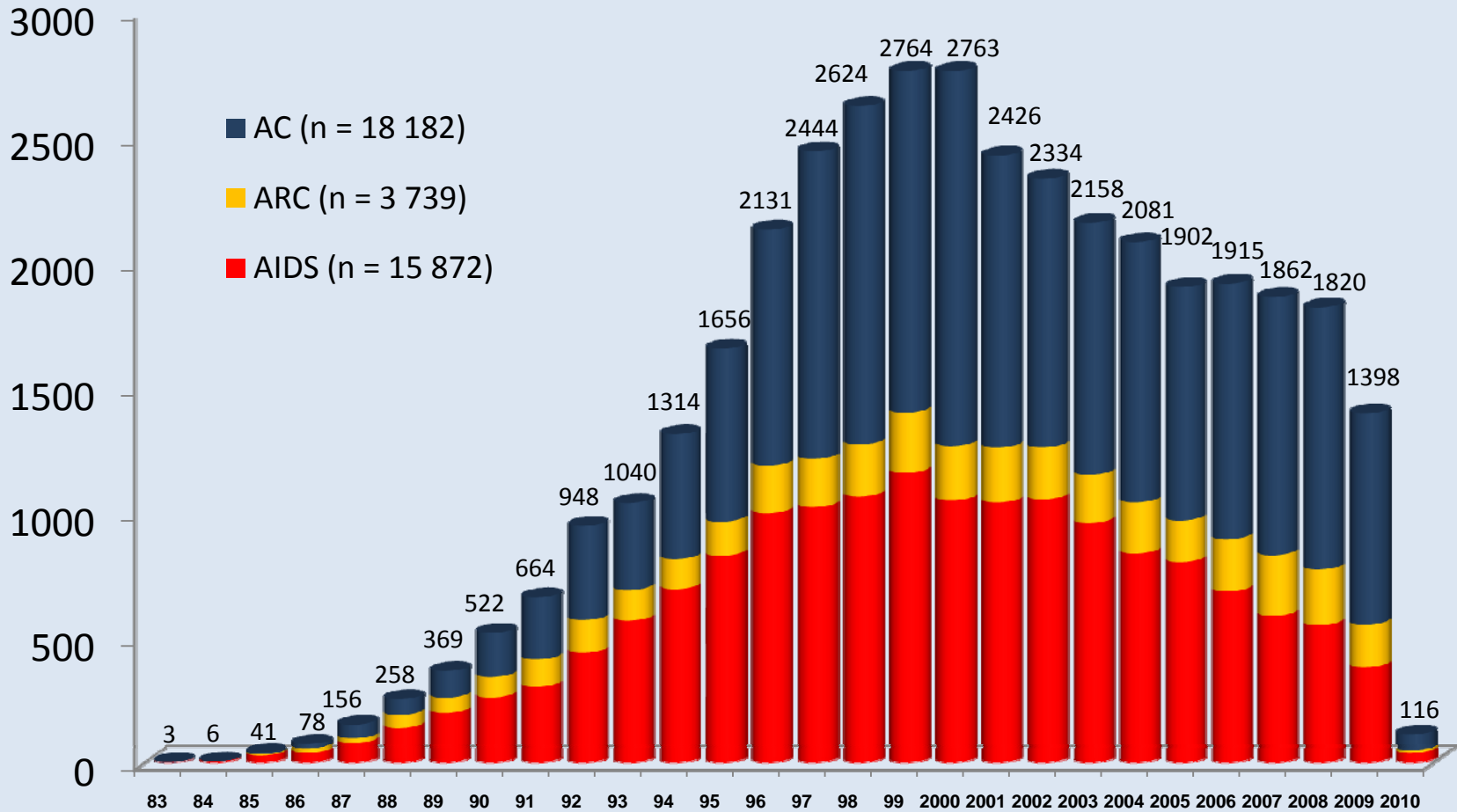
**Infectious Diseases Depart., Hosp. Joaquim Urbano  
Health Sciences School, University Minho  
Portuguese Study Group on Coinfection, President**

Lisbon, 19 Nov 2010

# PORTUGAL

## HIV and AIDS cases reported by year and stage of infection

Number of cases

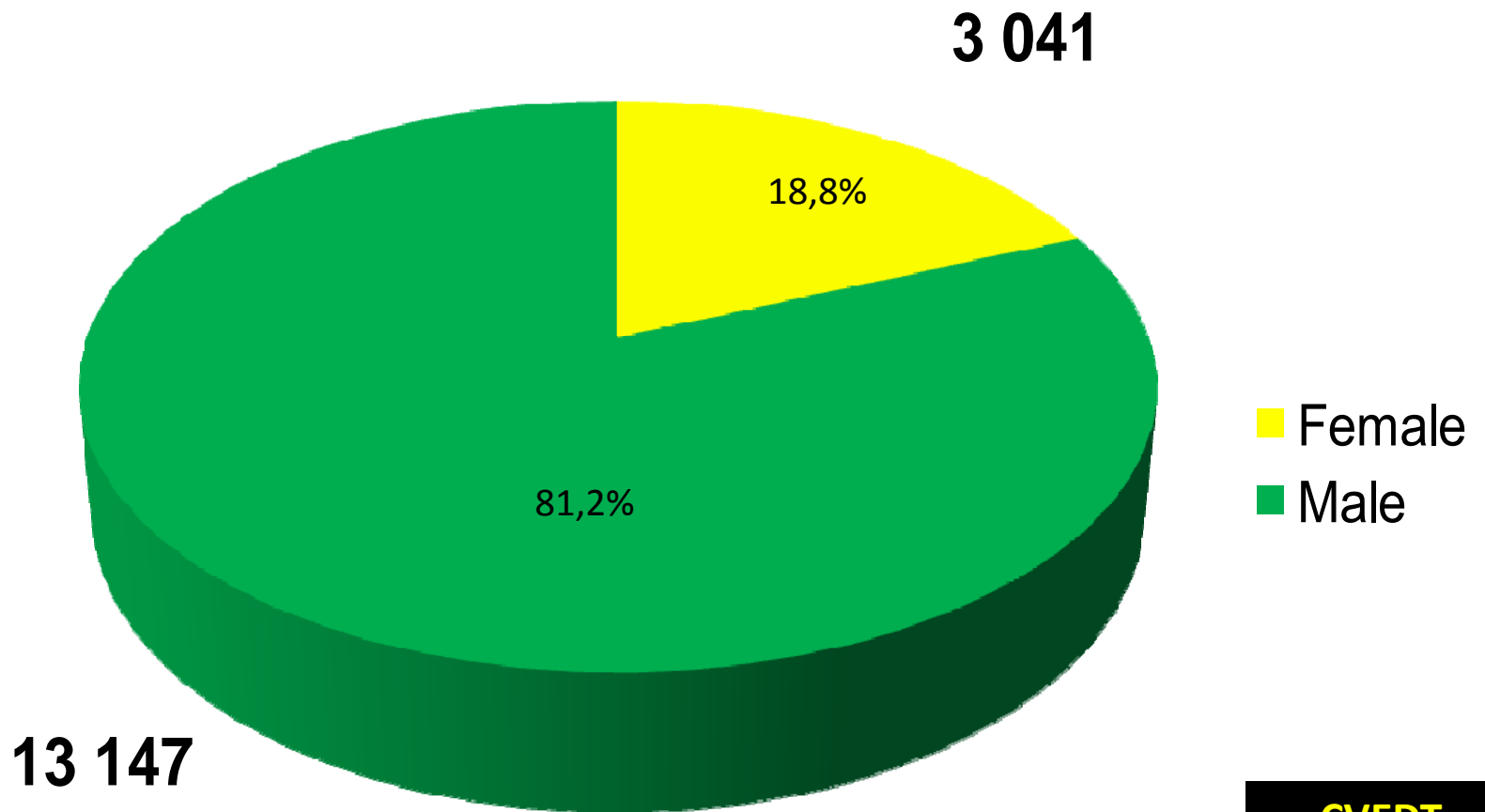


**N = 37793**

**Year of diagnosis**

**CVEDT 31-03-2010**

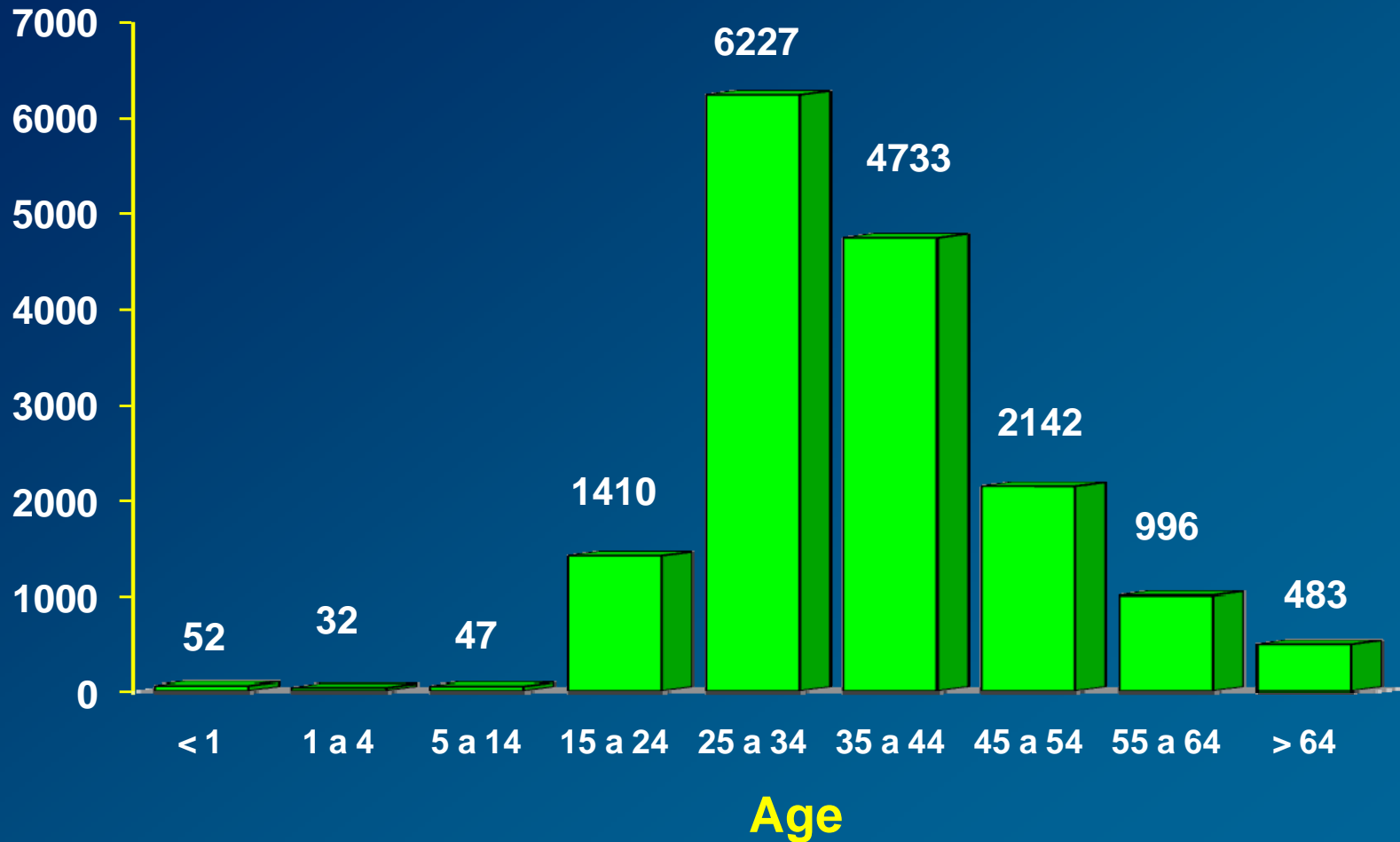
# PORTUGAL AIDS cases by gender



CVEDT

30-09-2010

# PORTUGAL AIDS cases by age



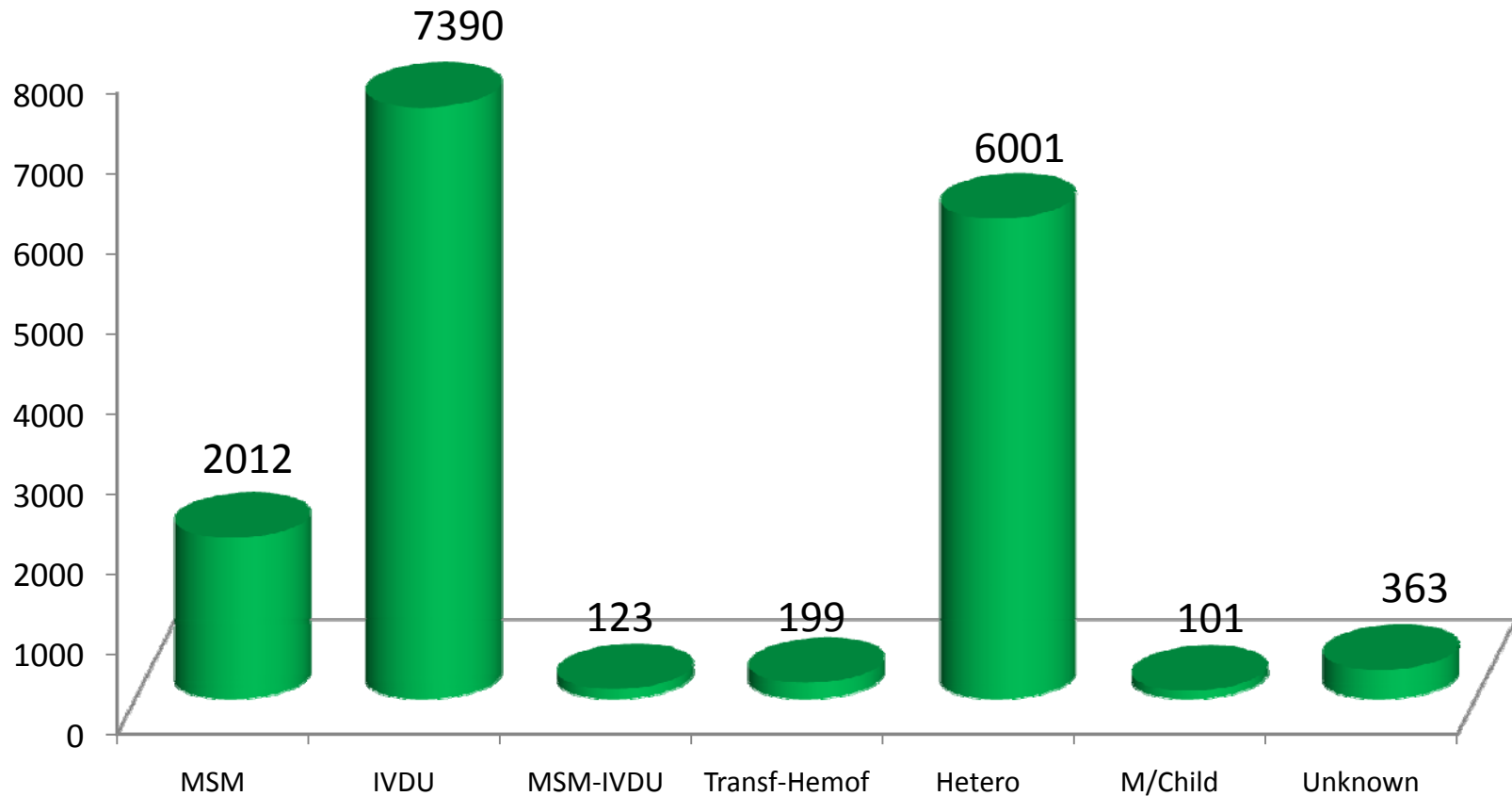
CVEDT

30-09-2010

# PORTUGAL

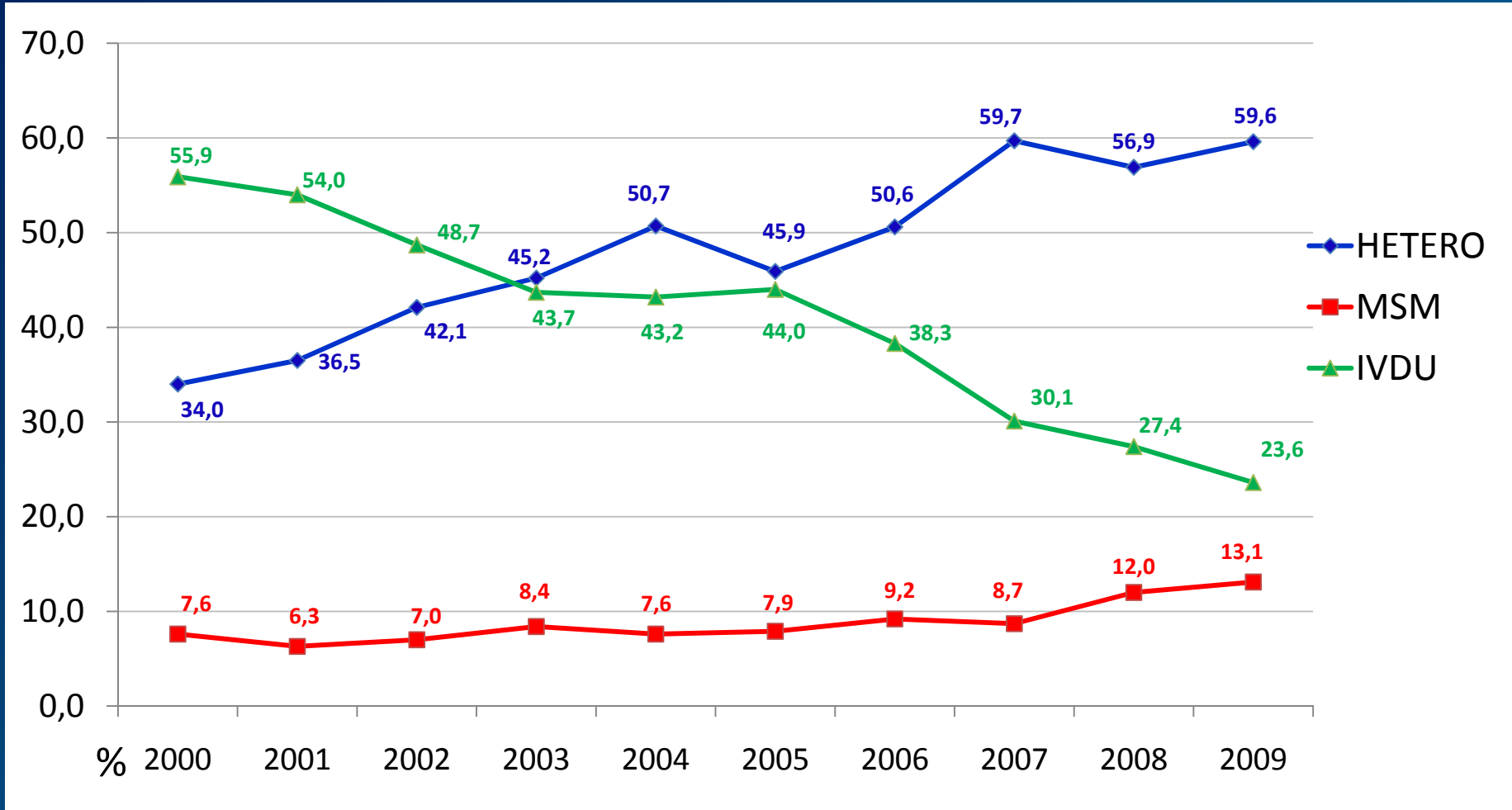
## AIDS cases by transmission category

**Total = 16 189**



# PORTUGAL

## New AIDS cases: trends by transmission category

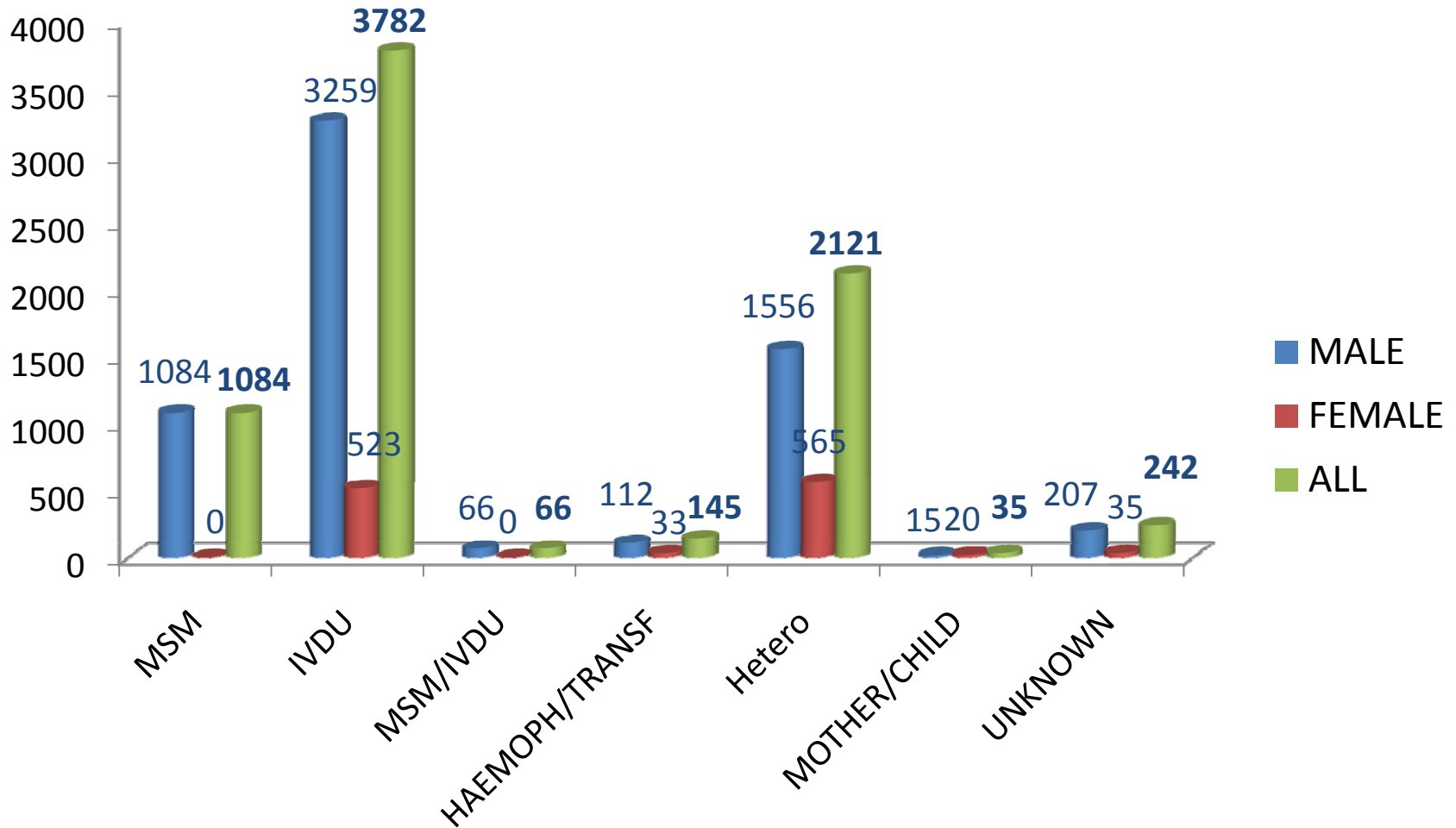


Year of diagnosis

CVEDT 31-12-2009

# PORTUGAL

## AIDS cases: death by transmission category

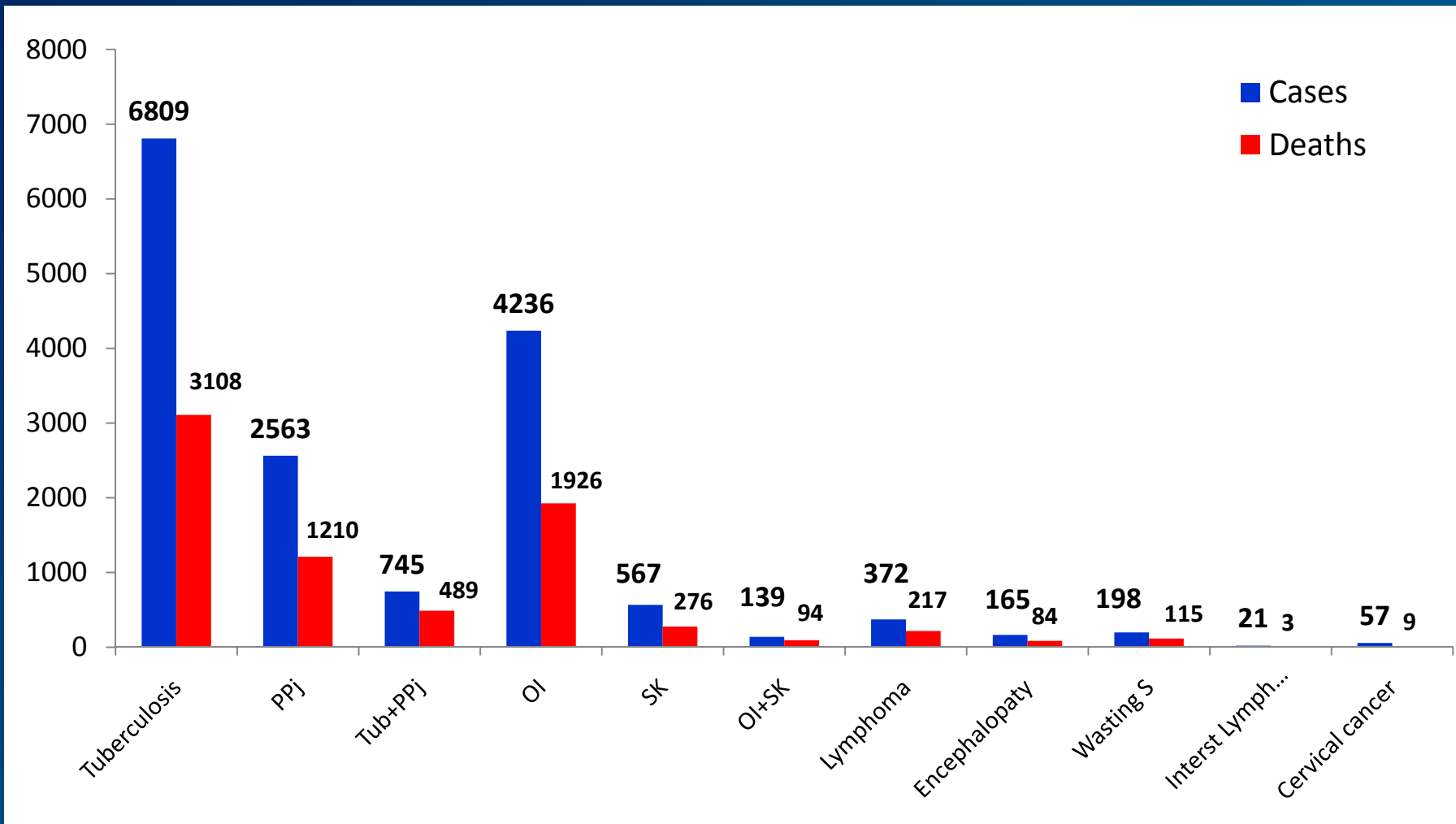


N = 7475

CVEDT 31-12-2009

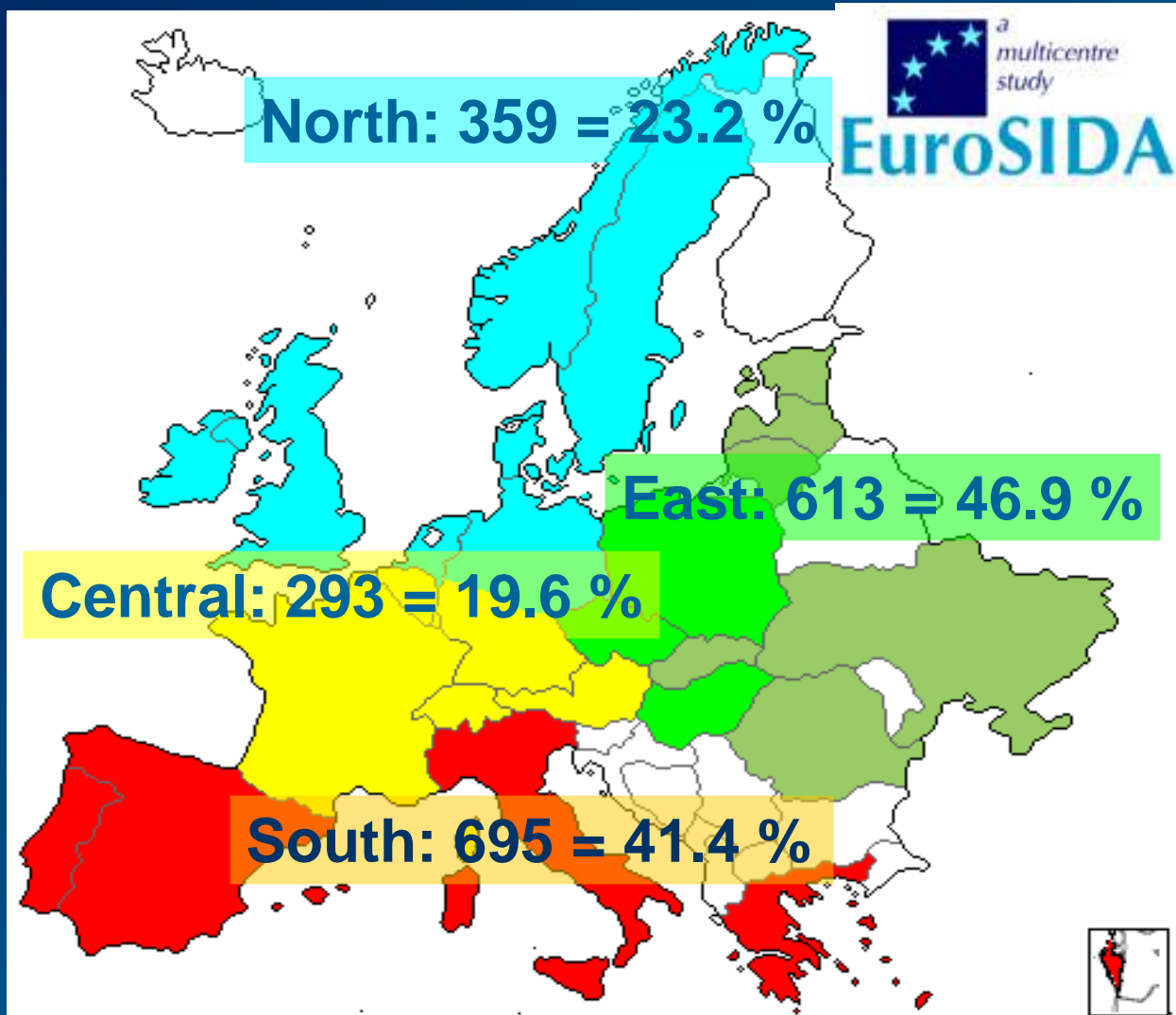
# PORTUGAL

## AIDS cases: mortality by opportunistic disease





# Prevalence of hepatitis C in the HIV population (1960/5957 patients = 33%)



**Regions:**  
**South**  
**Central**  
**North**  
**East**

# Epidemiology of HCV in Portugal

- **Estimated HCV prevalence: 1.0 to 1.4%**  
**100.000-140.000**

Rui Tato Marinho, DGS

- **Number of reported cases of HIV Infection: 38.000**

CNLCS, 2009

- **Estimated prevalence in the South of Europe: 41.4%**

EuroSIDA, 2005

- **Estimated number of coinfecting patients (HCV/HIV):**  
**15.732**

# Epidemiology of HCV in Portugal

## HCV monoinfected *versus* HCV /HIV coinfecting patients

- AIM and Methods
- Evaluation of differences between HIV negative and HIV positive patients infected with HCV
- Retrospective, transversal, multicentric survey
- Participation of 10 hospitals (ID, IM, Gastroenterology)

Monoinfected 783 pts

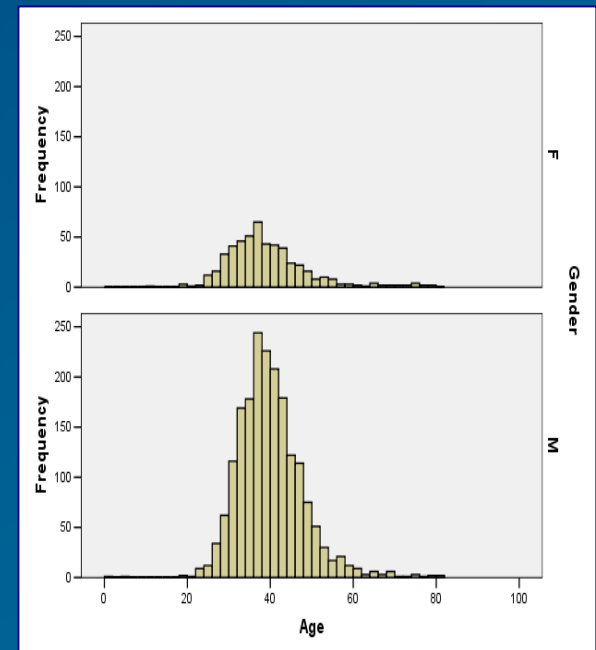
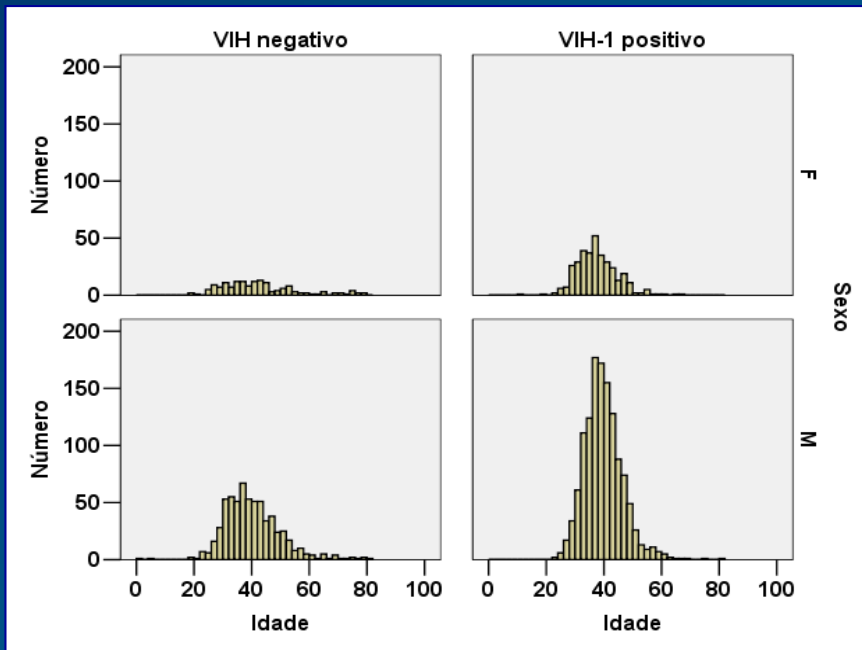
Coinfected 1650 pts

Organized by the Portuguese Study Group on HIV/Hepatitis coinfection

Data were analyzed for statistical significance by student t test or non parametric test

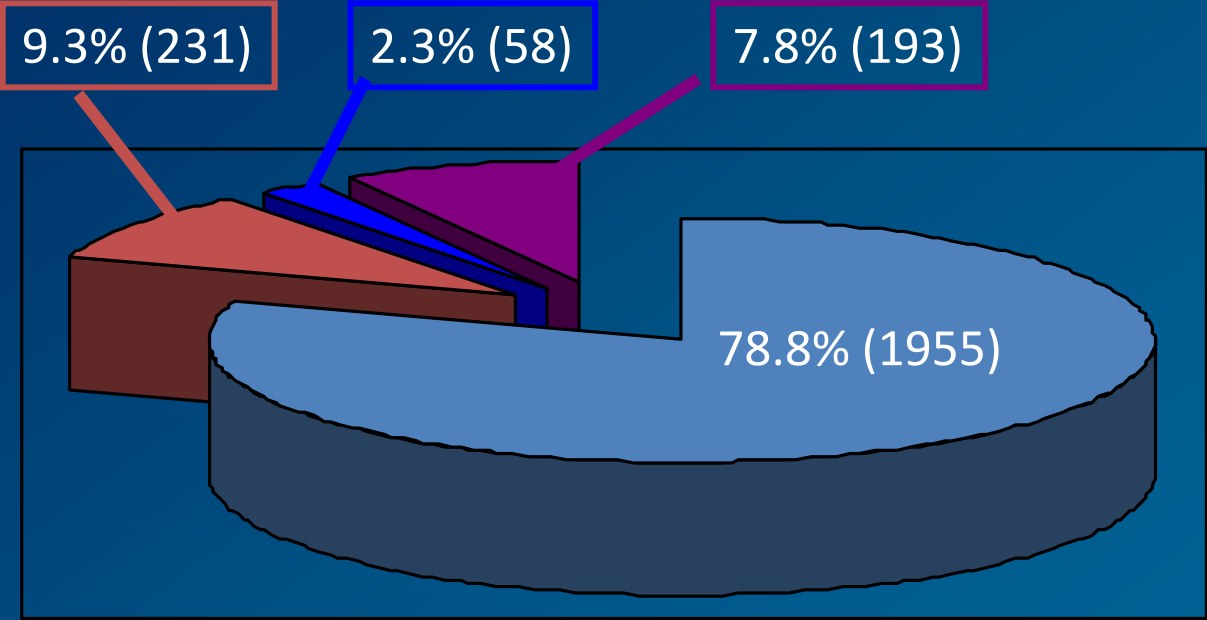
# HCV monoinfected *versus* HCV/HIV coinfecting patients

	HCV/HIV-	HCV/HIV+	TOTAL
Male	627 (80.1%)	1294 (78.4%)	1952 (78.7%)
Female	156 (19.9%)	356 (21.6%)	512 (21.0%)
Mean age, ♂	39.8 years	39.3 years	39.5 years
Mean age, ♀	42.3 years	37.1 years	38.8 years



# HCV monoinfected *versus* HCV/HIV coinfected patients

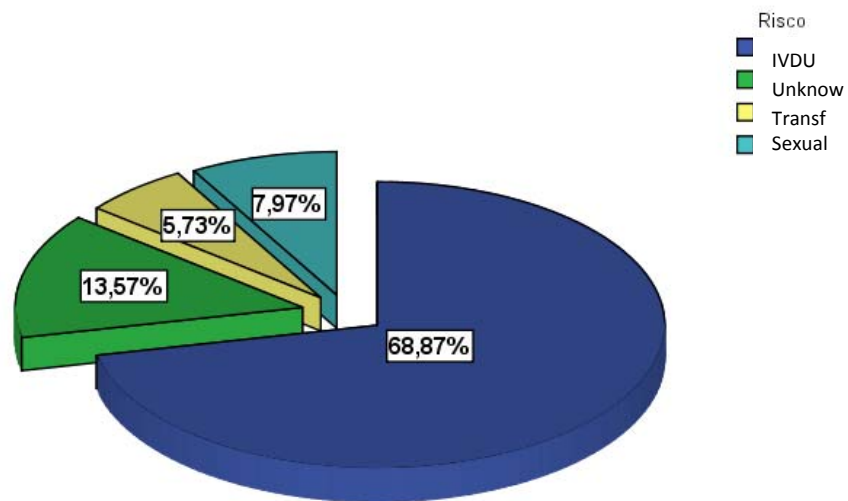
## Transmission



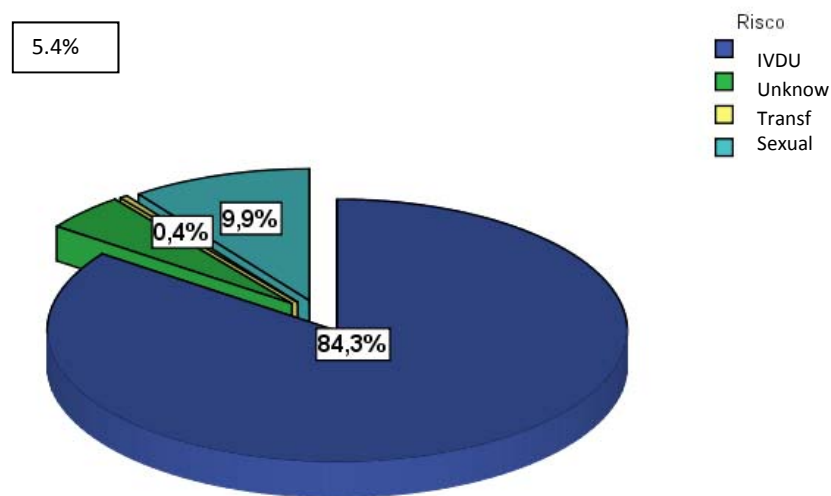
# HCV monoinfected *versus* HCV/HIV coinfecting patients

## Transmission by HIV status

HIV -



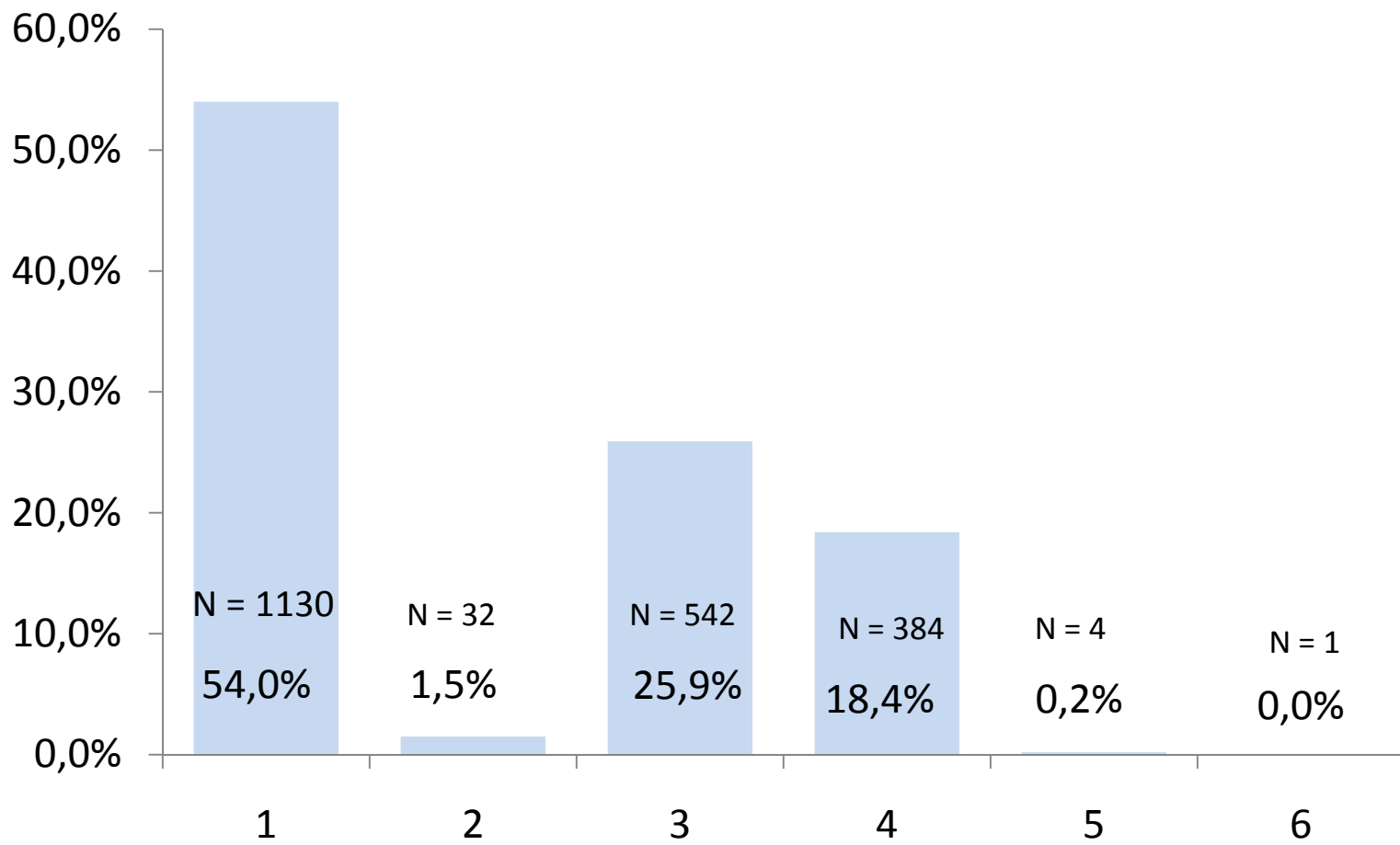
HIV +



# HCV monoinfected *versus* HCV/HIV coinfected patients

## Genotype distribution

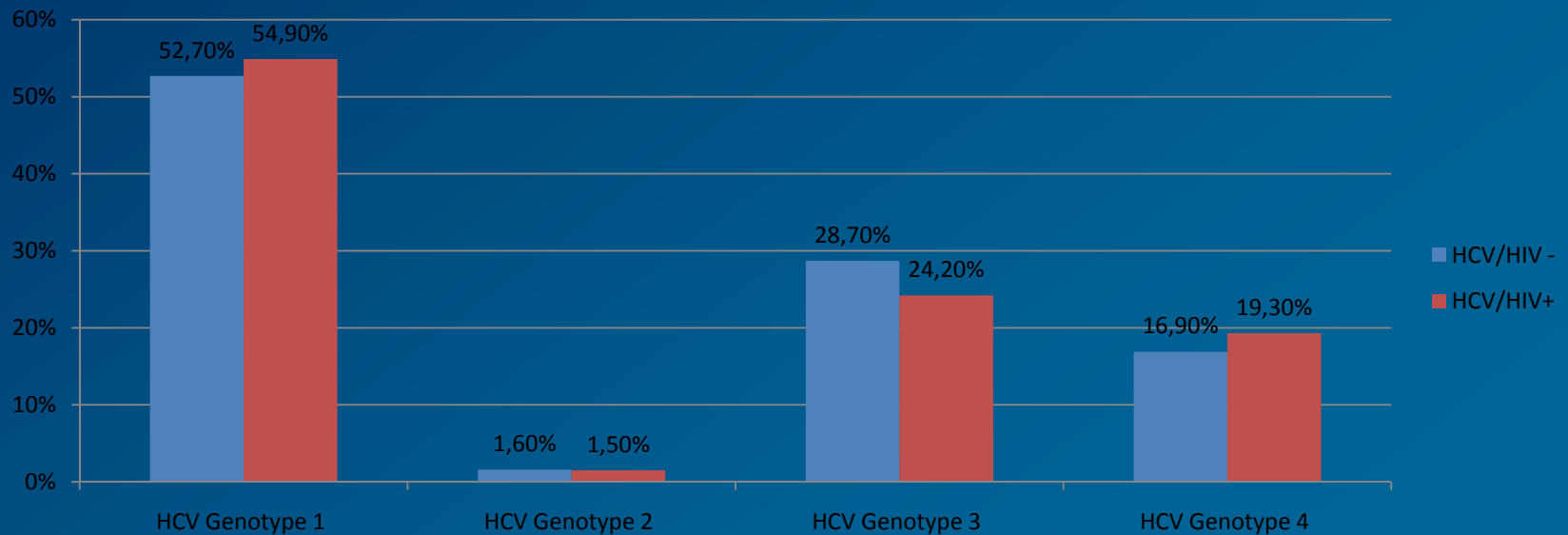
Frequency



Genotype

# HCV monoinfected *versus* HCV/HIV coinfected patients

	<b>HCV/HIV -</b>	<b>HCV/HIV+</b>	<b>TOTAL</b>
<b>HCV Genotype 1</b>	<b>384 (52.7%)</b>	<b>728 (54.9%)</b>	<b>1112 (54.0%)</b>
<b>HCV Genotype 2</b>	<b>12 (1.6%)</b>	<b>20 (1.5%)</b>	<b>32 (1.5%)</b>
<b>HCV Genotype 3</b>	<b>209 (28.7%)</b>	<b>321 (24.2%)</b>	<b>530 (25.9%)</b>
<b>HCV Genotype 4</b>	<b>123 (16.9%)</b>	<b>255 (19.3%)</b>	<b>378 (18.4%)</b>

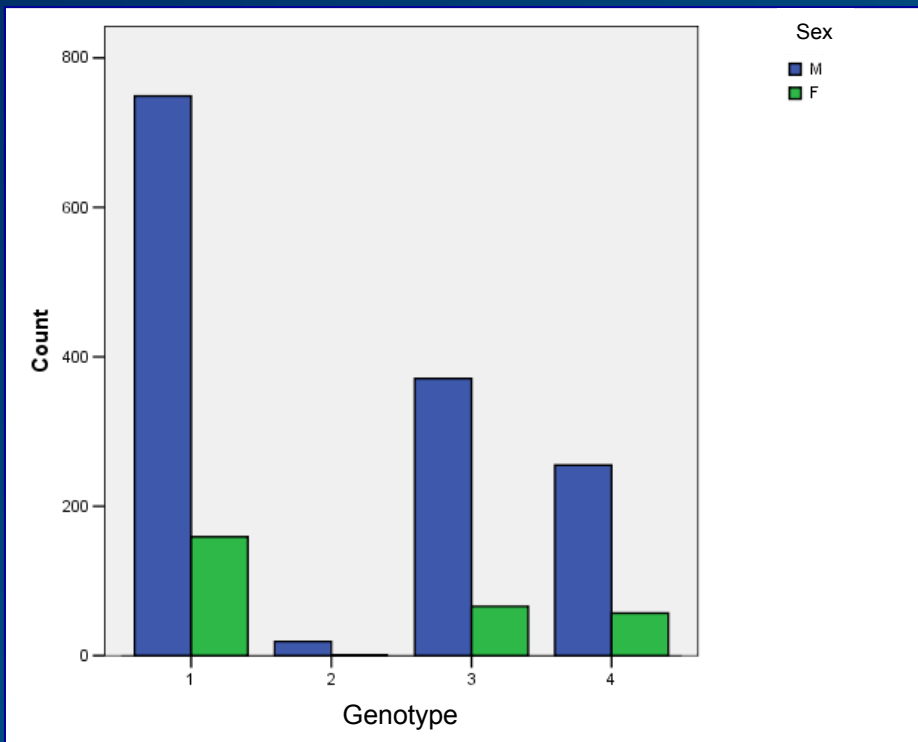




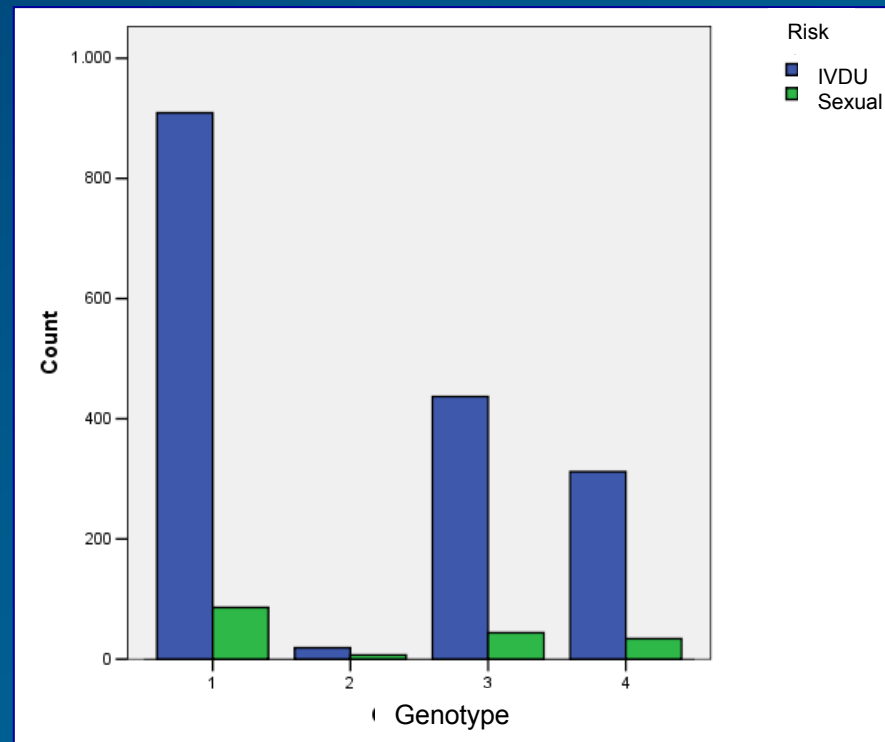
# HCV monoinfected *versus* HCV/HIV coinfecting patients

## Distribution of genotype by gender and mode of transmission

Gender



Mode of transmission

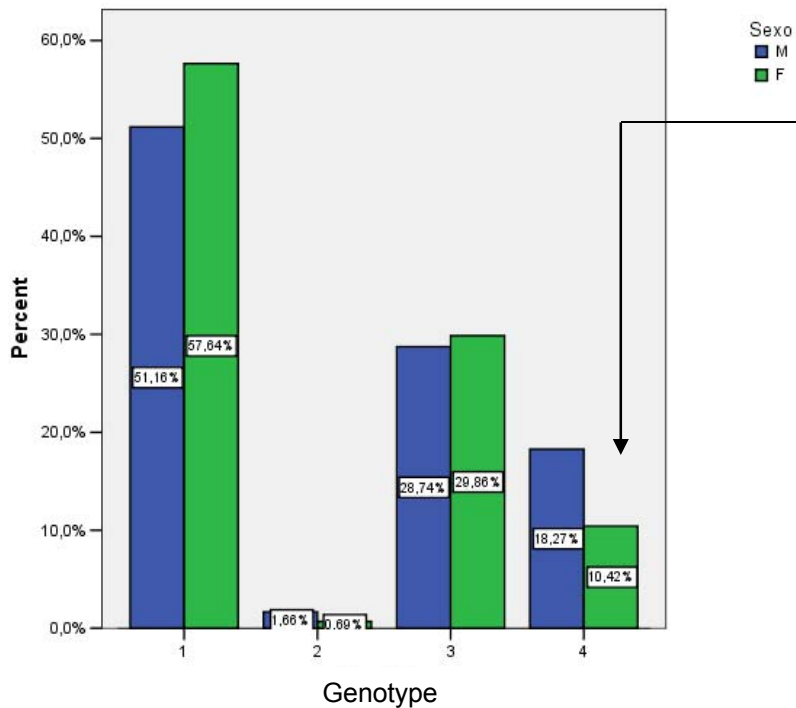


# HCV monoinfected *versus* HCV/HIV coinfecting patients

## Genotype distribution by HIV status and gender

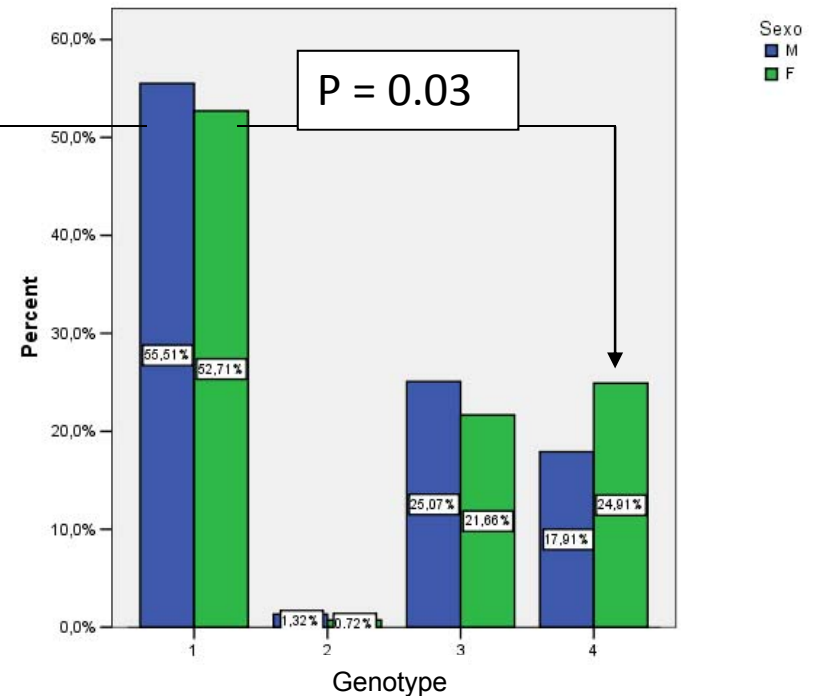
HIV negative

relative genotype distribution by gender in the HIV negative population



HIV positive

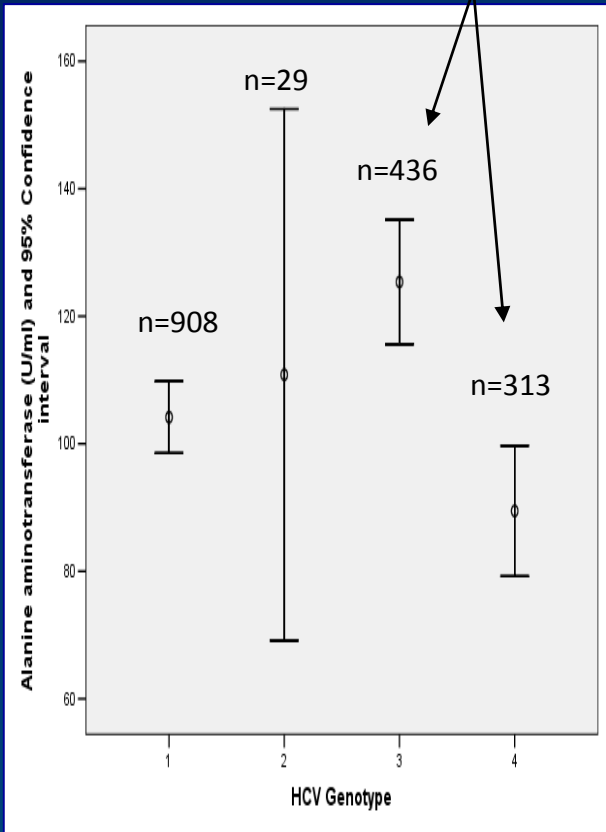
relative genotype distribution by gender in HIV positive patients



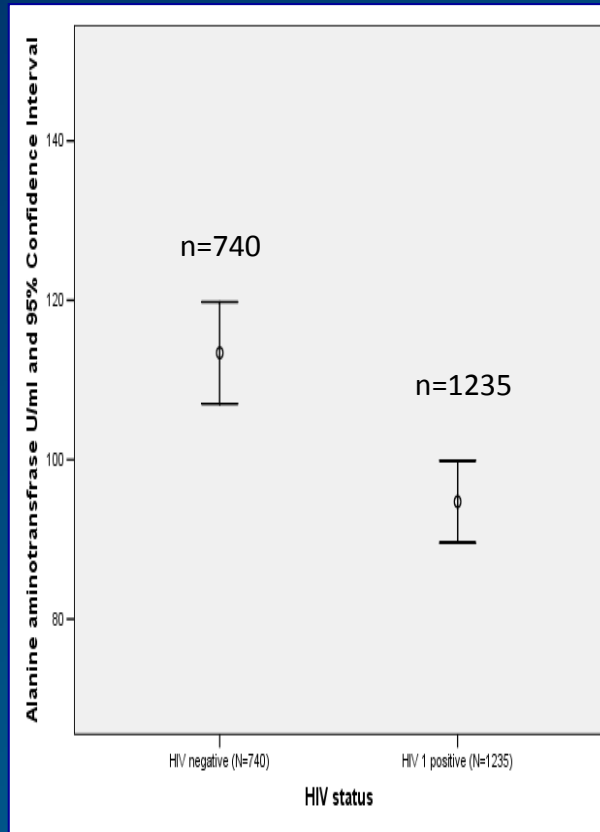
# HCV monoinfected *versus* HCV/HIV coinfecting patients

## BASELINE ALT BY GENOTYPE, HIV STATUS AND CD4 CELLS

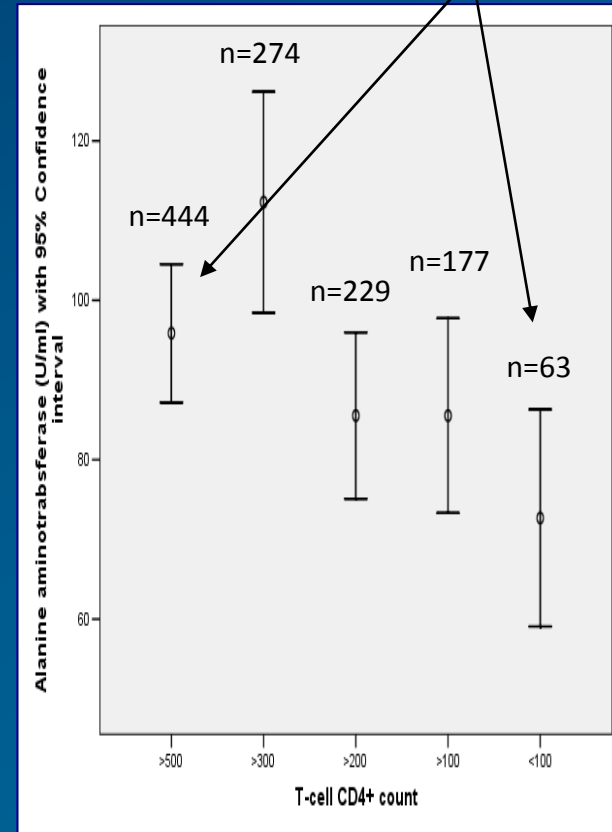
$p < 0.0001$



$P < 0.001$



$p = 0.05$

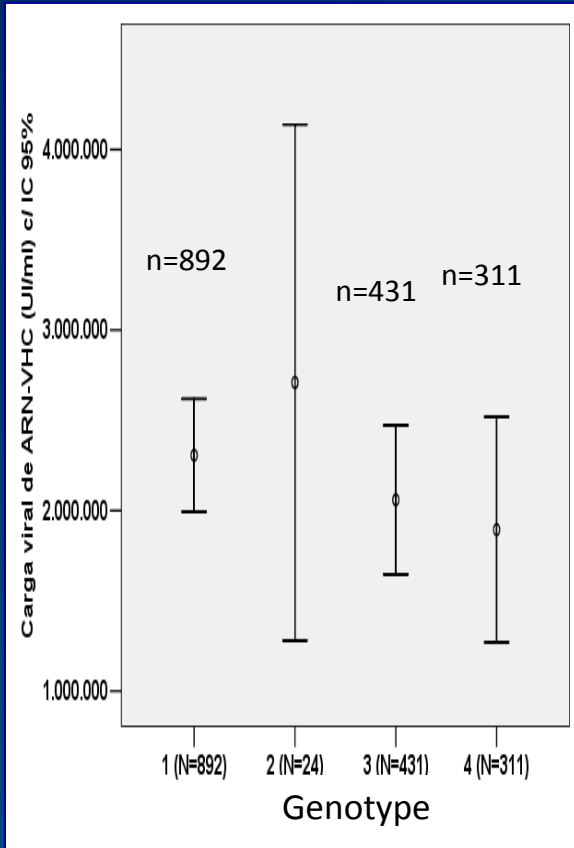


# HCV monoinfected *versus* HCV/HIV coinfectied patients

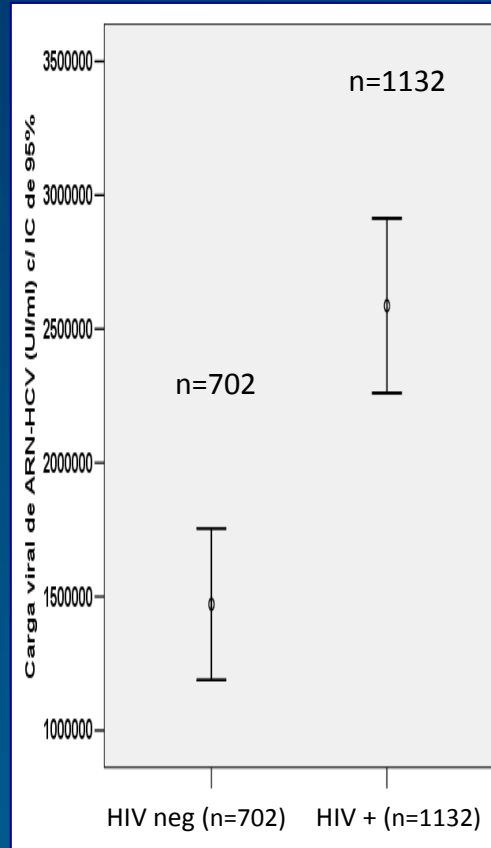
## HCV VIRAL LOAD BY GENOTYPE, HIV STATUS AND CD4 CELLS

p=ns (0.795)

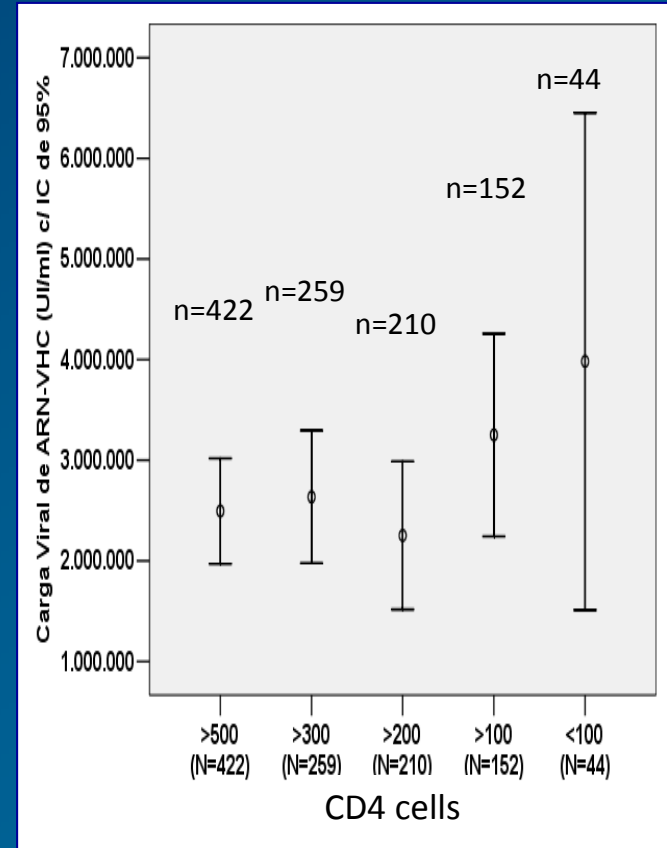
n=24



p<0.001



p=ns (0.244)



# Main reasons to treat chronic HCV in HIV-infected patients

- HIV patients live longer
- HIV increases viral load of HBV and HCV
- Faster progression to liver cirrhosis<sup>1</sup>
- Increased mortality due to end-stage liver disease (ESLD)<sup>2</sup>
- Higher risk of hepatotoxicity following treatment with antiretroviral therapy (ART) drugs

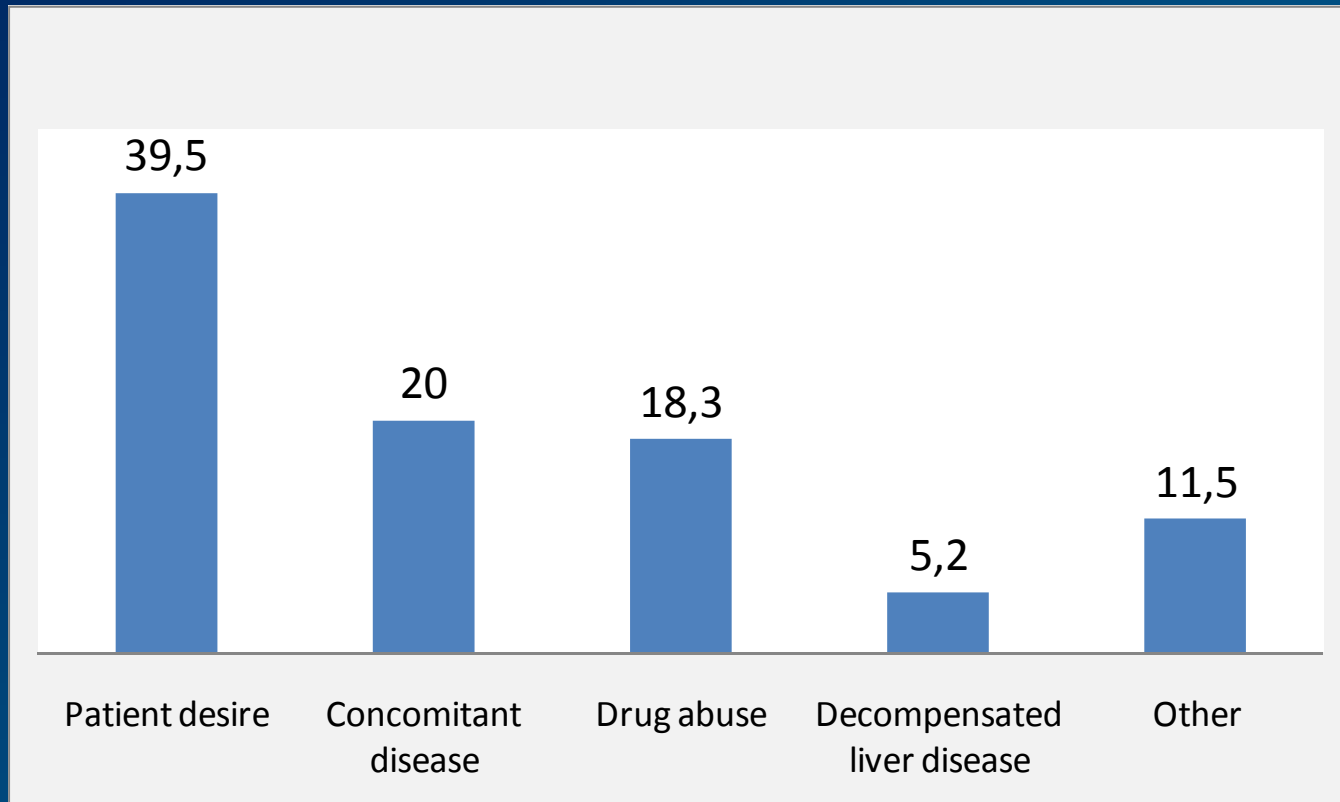
# Treatment of coinfection in Portugal

Only 10-15% of HCV/HIV co-infected patients were treated

## Reasons for non-treatment of chronic hepatitis C in HIV infection

CD4+ T cells count <200/mm <sup>3</sup>	26,8% (n=30)	Precarious socioeconomic conditions	3,6% (n=4)
Severe psychiatric disease*	17,9% (n=20)	Patient refusal	2,7% (n=3)
Chronic alcohol abuse	16,1% (n=18)	Recent immunological recovery	1,8% (n=2)
Active intravenous drug use	14,3% (n=16)	Active opportunistic infections / Infectious diseases	2,7% (n=3)
Previous unsuccessful HCV treatment	10,7% (n=12)	Absence of liver biopsy	3,6% (n=4)
Nonadherence with medical visits	8,9% (n=10)	Decompensated hepatic cirrhosis	1,8% (n=2)
Thrombocytopenia <70 000	7,1% (n=8)	Concomitant medication with rifampin/rifabutin, isoniazide, pyrazinamide	2,7% (n=3)
Serum creatinine level >1,5x ULN	2,7% (n=3)	Anatomic splenectomy	0,9% (n=1)
Hgb<12(M) ou <11 (F) [mg/dl]	1,8% (n=2)	Pregnancy	0,9% (n=1)
Age >50 years	2,7% (n=3)	Nonadherence to HAART	3,6% (n=4)
Severe pulmonary disease	0,9% (n=1)	Unidentified reasons	11,6% (n=13)

# Barriers to HCV Antiviral Treatment Among IDUs



Patient desire = fear of therapy and lack of understanding regarding importance of therapy

# Barriers to HCV Antiviral Treatment Among IDU

- Concern side effects
- Don't feel sick
- Other health problems
- Don't want to make liver biopsy
- Inadequate information
- Length of treatment

❖ Clinical decision based in probable lower adherence in IDUs

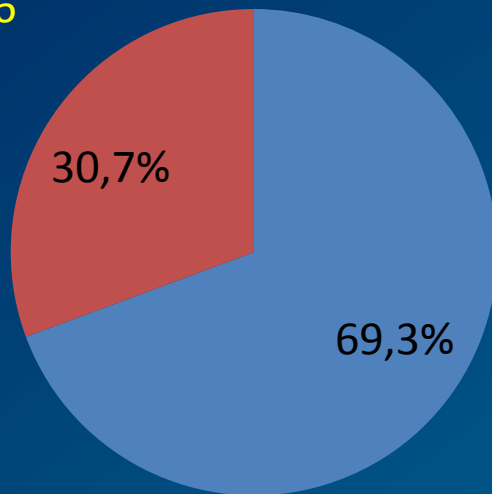


# HCV monoinfected *versus* HCV/HIV coinfecting patients

## Sustained Virological Response

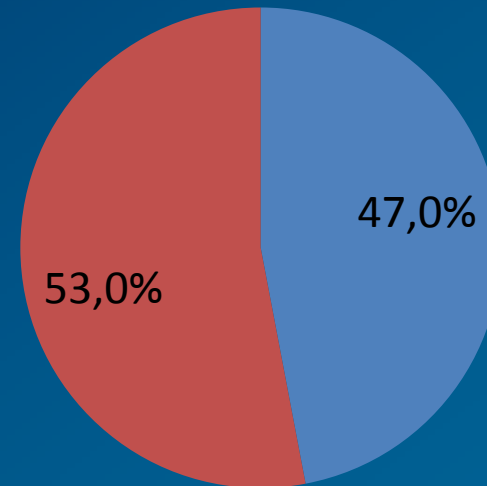
**HIV NEG**

n = 296



**HIV POS**

n = 290



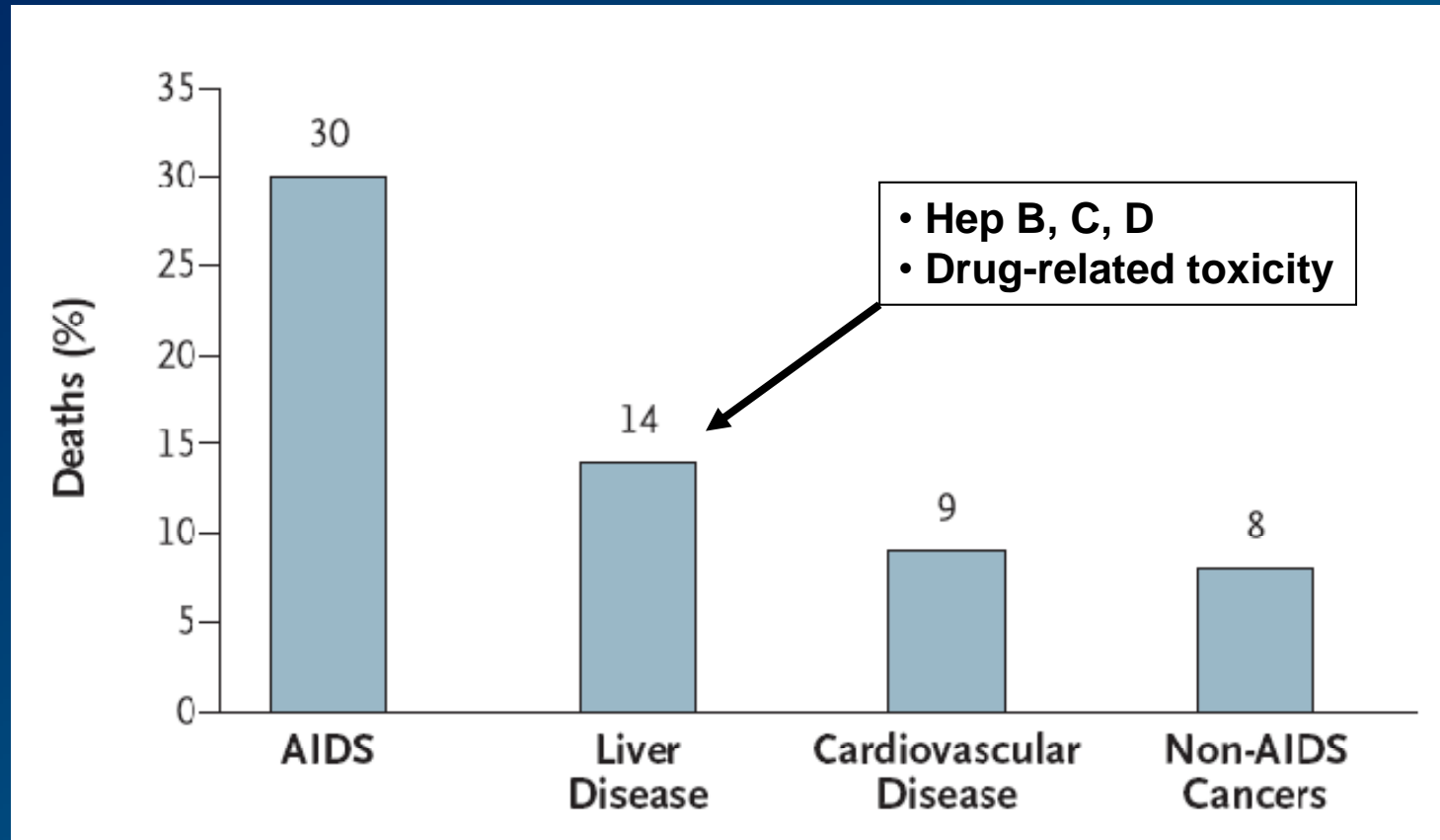
■ RVS  
■ NO

62 %  
84%

Genotype 1  
Genotype 3

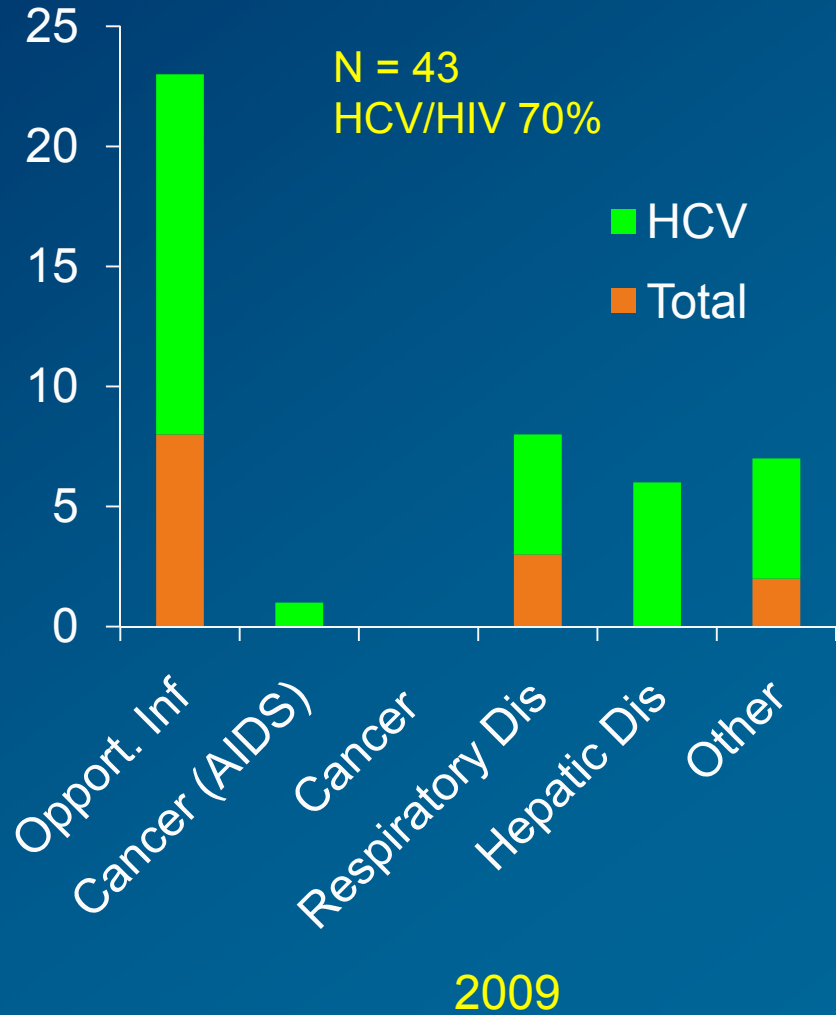
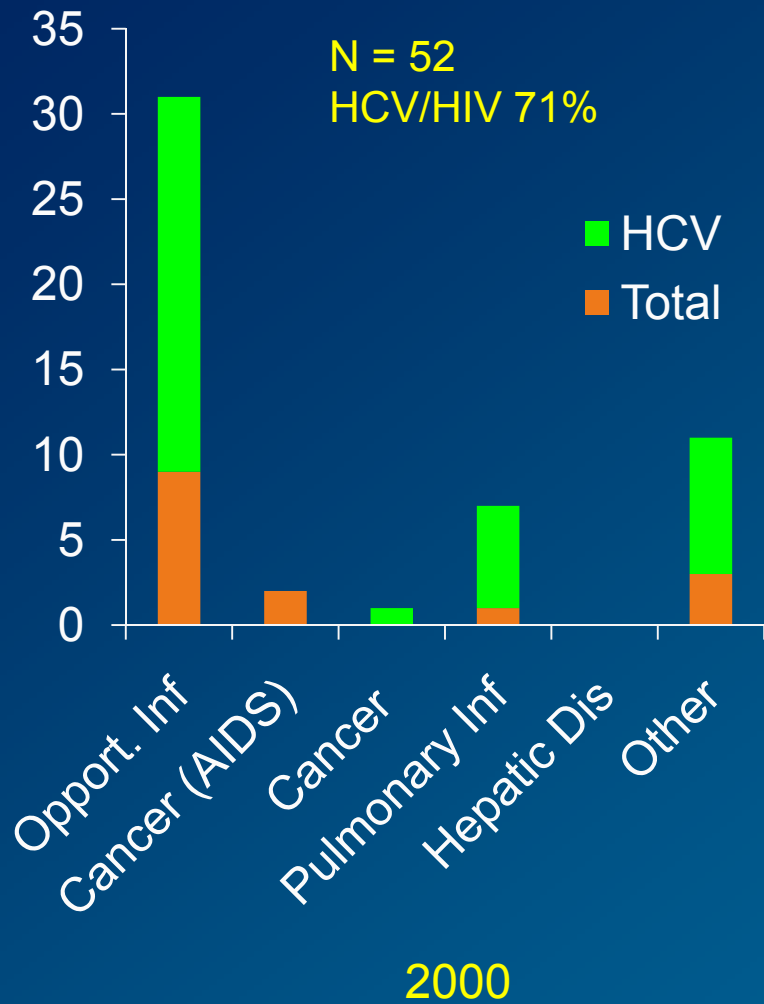
25.9%  
78%

# Deaths in a cohort of 23,441 HIV patients on antiretrovirals



Weber et al. Liver-related deaths in persons infected with HIV: the D:A:D study. Arch Intern Med 2006; 166: 1632-41.

# Causes of Death in 2000 and 2009 in HIV-infected Patients Admitted in ID Service (HJU)



## CONCLUSIONS

- ✓ The prevalence of HCV in the HIV-infected population is higher than 40%
- ✓ The number of new cases of HCV/HIV coinfection is decreasing in recent years
- ✓ Male/female ratio in coinfecting patients is  $\approx 4:1$
- ✓ Mean age of coinfecting patients is, at the moment of diagnosis, 38-39 years
- ✓ IVDU is the most important mode of acquisition of both viruses

## CONCLUSIONS

- ✓ Genotype 1 (55%) and genotype 3 (26%) are the most prevalent genotypes in coinfecting patients
- ✓ Genotype 4 (18.5%) is also relevant in this population
  
- ✓ In patients infected with genotype 3 mean baseline ALT values were higher than in patients with other genotypes
- ✓ Baseline ALT values were lower in coinfecting *versus* mono-infected patients
- ✓ In coinfecting patients ALT levels were directly associated with CD4 cell count

## CONCLUSIONS

- ✓ Mean baseline HCV viral load was higher in coinfecting patients when compared with monoinfected
- ✓ In coinfecting patients, HCV viral load was inversely associated with CD4 cells count
- ✓ SVR was lower in coinfecting patients with genotype 1 (when compared with monoinfected patients) but response to treatment was good in patients with genotype 3
- ✓ All efforts must be done to treat coinfecting patients to prevent the rising mortality registered in this population

# AKNOWLEDGMENTS

- **Hospital Joaquim Urbano**
  - Tavares AP
  - Méndez J
  - Sarmento e Castro
- **Hospital Egas Moniz**
  - Borges F
  - Alfaiate D
  - Mansinho K
- **Hospital de Santa Maria**
  - Badura R
  - Valadas E
  - Afonso C
  - Santos C
  - Janeiro N
  - Antunes F
- **Centro Hospitalar de Coimbra**
  - Valente C
  - Vieira A
  - Faisca R
- **Hospital Curry Cabral**
  - Machado J
  - Maltez F
- **Hospitais da Universidade de Coimbra**
  - Alves H
  - Serra E
  - Saraiva Cunha J
- **Hospital São João**
  - Serrão R
  - Sarmento A
- **Hospital Garcia de Orta**
  - Aguas MJ
  - Azuaje C
- **Hospital Vila Real**
  - Presa J
- **Centro Hospitalar Lisboa Central**
  - Lampreia F
  - Germano I
  - Calinas F
  - Corte Real R