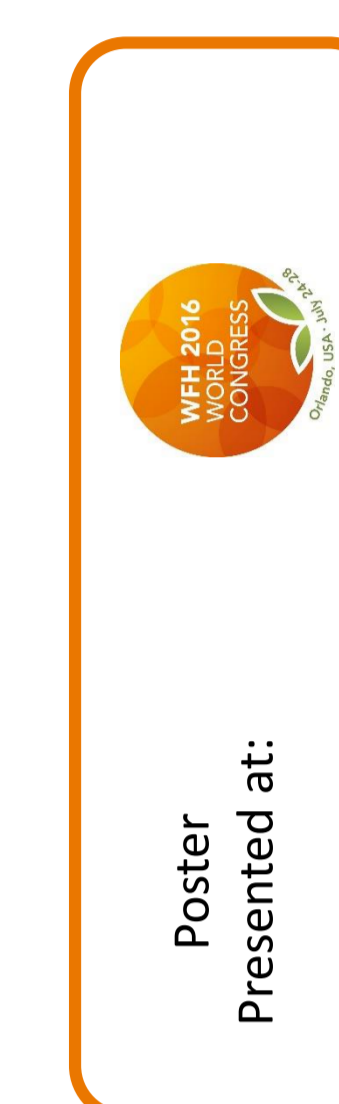


# Twenty-three years of HIV infection in hemophilic patients

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## INTRODUCTION and AIMS

Human Immunodeficiency Virus (HIV) infection is still a major cause of morbidity and mortality in people with hemophilia who were treated with plasma-derived clotting factors products before 1990.

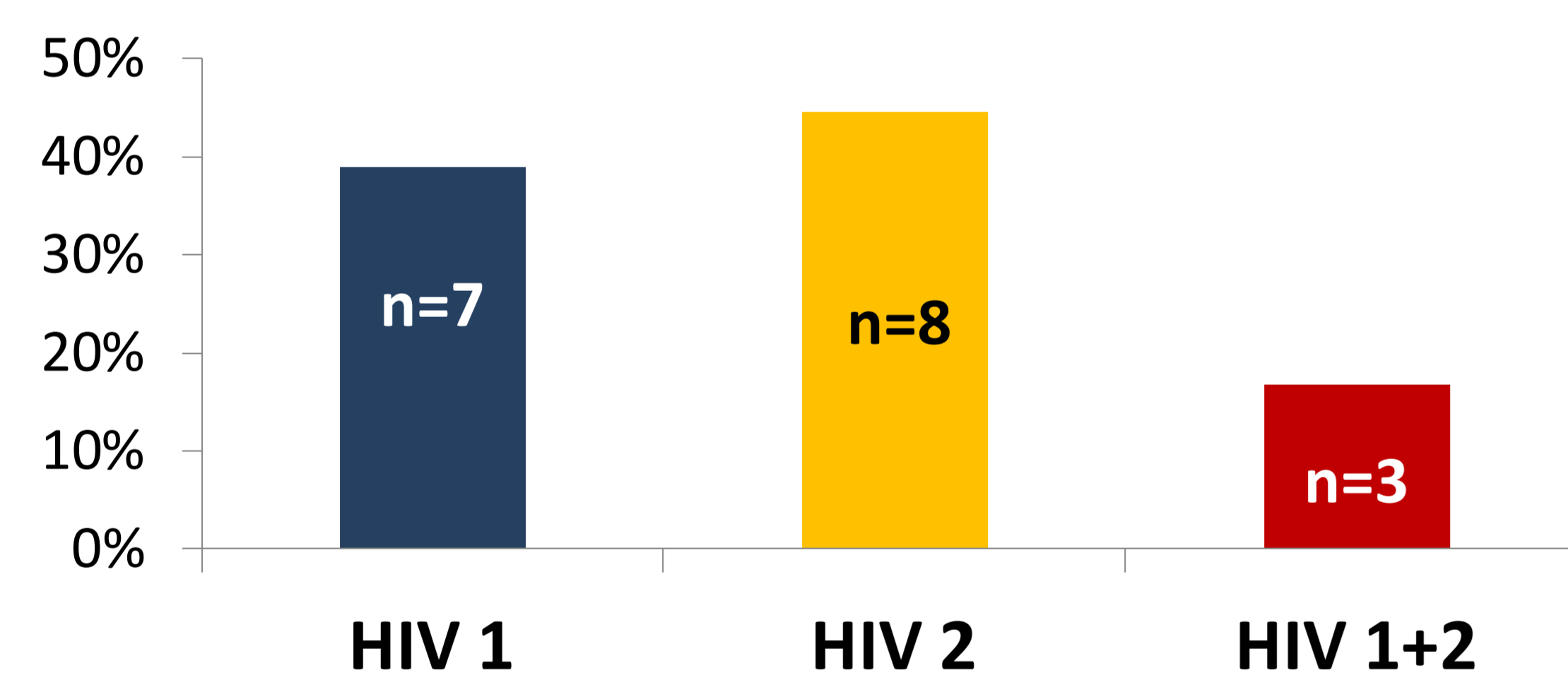
In 1992 we analyzed the patients followed at the hemophilia center of our hospital to determine and characterize the number of HIV infected patients. Twenty-three years later we re-evaluate these patients in order to study evolution of infection.

## METHODS

From 146 hemophilia patients evaluated in 1992, 18 were HIV+ (12.3% of all patients with hemophilia and 32% of all severe cases). All patients were also infected with hepatitis C virus. Seventeen had hemophilia A and 1 hemophilia B.

The diagnosis of HIV was done between the years of 1986 and 1989, in patients with median age of 26.4 years (range 24-29). Seven patients were infected with HIV 1, 8 with HIV 2 and 3 co-infected with HIV 1 and 2 (Figure 1).

Figure 1– Type of HIV infection in hemophilic patients



## CONCLUSION

We reported a lower percentage of HIV infected people with hemophilia in comparison with other studies (between 17% and 41% in Western Europe), probably due to moderate use of commercial products.

The high prevalence of HIV2 may be explained by our blood donors that were returning from African countries. The fact that only 38% of HIV2+ have AIDS and the only 2 alive HIV2+ patients do not have AIDS, confirm the less aggressive course of HIV2. Intracerebral bleeding had a high prevalence that may be partially explained by haemophilia severity and age of patients. Is it possible that the chronic infection also contribute to these bleedings?

## REFERENCES

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## RESULTS

From the 7 patients HIV1+, 86% (n=6) had AIDS. From the 8 patients HIV2+ 38% (n=3) had AIDS and the 3 co-infected patients, all (100%) had AIDS. In the end of 2015, 5 patients were alive: 2 HIV1 and 1 co-infected, all with AIDS and under treatment; 2 with HIV2 without AIDS. The medium length of infection (MLI) for these patients was >26 years.

Table 1 - Characteristics of HIV 1 infected patients

Hemophilia	HIV 1			CD 4 x10 <sup>3</sup> /ml		Current state	Death		Lenth of infection (years)
	Year diagnosis	AIDS	ARVT	At diagnosis	Latest value		Cause	Date	
A	1988	NAv	No	NAv	NAv	Deceased	ICB pos-traumatic	July 1992	4
A	1986	Yes	Yes	193	52	Deceased	AIDS	January 1995	8
A	1987	Yes	Yes		161	Deceased	AIDS	March 1995	8
A	1987	Yes	Yes	300	192	Deceased	Spontaneous ICB	June 2005	19
B	1989	Yes	Yes	170	550	Deceased	Hepatocellular CA	June 2012	23
A	1986	Yes	Yes	301	411	Alive	NAP	NAP	29
A	1987	Yes	Yes	469	350	Alive	NAP	NAP	28

Table 2 - Characteristics of HIV 2 infected patients

Hemophilia	HIV 2			CD 4 x10 <sup>3</sup> /ml		Current state	Death		Lenth of infection (years)
	Year diagnosis	AIDS	ARVT	At diagnosis	Latest value		Cause	Date	
A	NAv	Yes	Yes	NAv	NAv	Deceased	AIDS	2002	NAv
A	1987	Yes	Yes	17	32	Deceased	AIDS	1993	6
A	1987	Yes	Yes	174	10	Deceased	Spontaneous ICB	2002	15
A	1987	No	No	1334	1311	Deceased	Spontaneous ICB	2012	25
A	1989	No	No	554	572	Deceased	Spontaneous ICB	1997	23
A	1987	No	No	412	161	Deceased	Gastrointestinal bleeding	1996	9
A	1987	No	Yes	477	237	Alive	NAP	NAP	28
A	NAv	No	No	428	432	Alive	NAP	NAP	NAv

Table 3 - Characteristics of HIV 1+2 co-infected patients

Hemophilia	HIV 1 + 2			CD 4 x10 <sup>3</sup> /ml		Current state	Death		Lenth of infection (years)
	Year diagnosis	AIDS	ARVT	At diagnosis	Latest value		Cause	Date	
A	1988	Yes	Yes	77	NAv	Deceased	AIDS	1994	6
A	1986	Yes	Yes	247	290	Deceased	AIDS	NAv	NAv
A	1989	Yes	Yes	545	237	Alive	NAP	NAP	26

Legend: HIV: human immunodeficiency virus; AIDS: acquired immune deficiency syndrome; ARVT: antiretroviral therapy; ICB: intracerebral bleeding  
NAv: not available; NAP: not applicable.

In relation to CD4+ T-lymphocyte counts, in HIV1+ patients this mean value at diagnosis was 444±90 x10<sup>3</sup>/ml. This number remained stable, with mean counts of last available values 450±221 x10<sup>3</sup>/ml (Table 1). In HIV2+ patients CD4+ mean count in the ones without AIDS was 641±418 at diagnosis and 452±416 x10<sup>3</sup>/ml at the last evaluation. In HIV2+ patients with AIDS these counts were much lower as expected, (96±111 and 21±11 x10<sup>3</sup>/ml, respectively) (Table 2). In the HIV 1+2 co-infected patients mean CD4+ counts were 290±237 at diagnosis and 264±391 x10<sup>3</sup>/ml in the last evaluation (Table 3).

From the 13 patients deceased, 6 (46%) died because of AIDS (2 HIV1, 2 HIV2 and 1 co-infected) after MLI of 7 years; 4 (31%) because of spontaneous intracerebral bleeding (1 HIV1 and 3 HIV2) with MLI of 21 years; 2 (15%) due to HCV and HBV complications (1 HIV1 and 1 HIV2) with MLI of 16 years and 1 (8%) because of post-traumatic bleeding after 4 years of infection diagnosis.