

Risk factors of "early" and "late" diagnosis of HIV infection in Austria



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Methods

- Retrospective, cohort analysis.
- Data collected from a digitalized clinical record.
- Logistic regression, Kaplan-Meier analysis, Cox regression

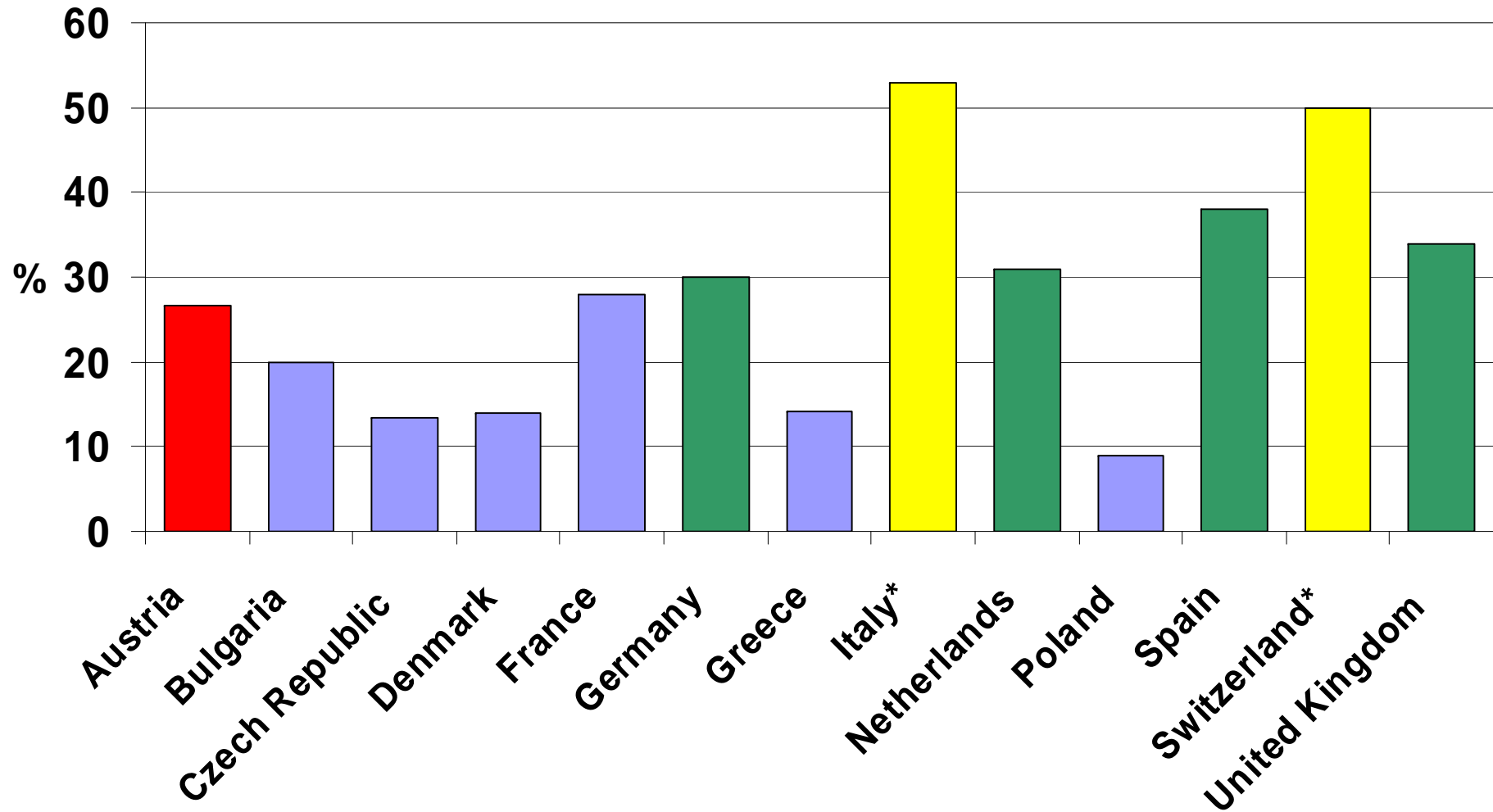
Late diagnosis of HIV infection

Individual and public health problem:

- **Increased mortality and morbidity. *AIDS 1999;13:2317***
- **Impaired response to ART. *HIV Medicine, 2007;8:135***
- **Increased cost. *HIV Medicine, 2004;5:93***
- **Increased risk for transmission. *AIDS 2006;20:1447***
- **Incidence 15 - 38% (- 53%). *AIDS Care, 21(3),2008***
- **Increasing incidence. *AIDS Care, 21(3),2008***

Incidence of "late" HIV diagnosis in Europe

AIDS Care, 21(3),2008



„Late“ diagnosis:

■ AIDS or CD4 < 200/ μ l

■ AIDS

■ CD4 < 200/ μ l

■ AIDS, calculated as a proportion of AIDS cases

Definitions of “late diagnosis” in different studies in Europe

Present at HIV diagnosis:

- CD4+ T-cells < 50, 200 or 350/ μ l
- AIDS
- AIDS or CD4+ T-cells < 200/ μ l
- AIDS within 1, 3 or 6 months of HIV diagnosis
- AIDS within 3 months or CD4+ T-cells < 200/ μ l within 6 months of diagnosis
- ...

Calculated as a proportion of AIDS cases (Italy, Switzerland)

Objective

To evaluate the risk factors of "early" and "late" diagnosis of HIV infection in Austria

Definitions and Methods

“Early diagnosis“

- **Primary HIV infection (western blot pattern or Antigen/HIV RNA combined with clinical picture) or**
- **last negative test within 3 years of the positive HIV test.**

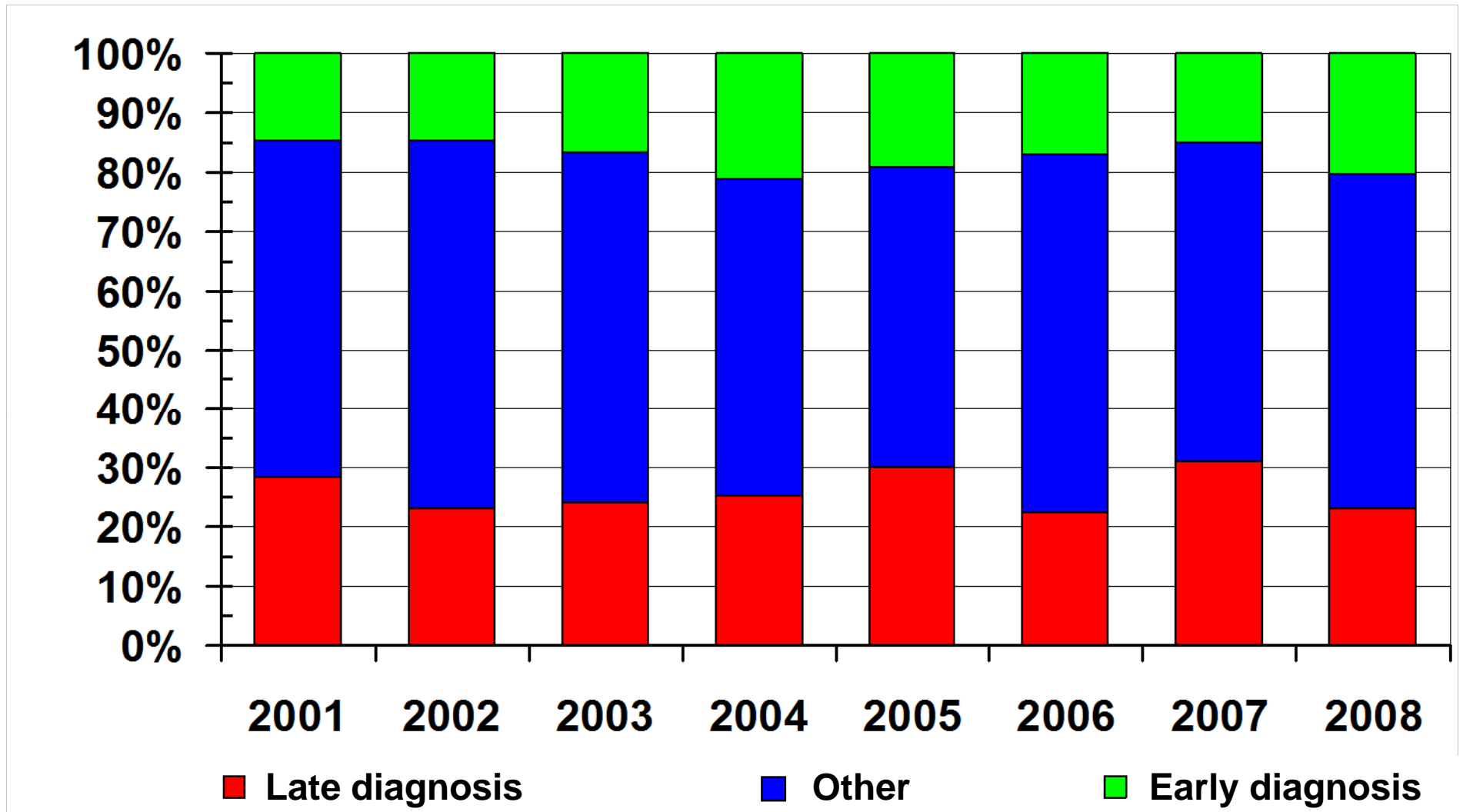
“Late diagnosis“

- **CD4 cell count <200 cells/ μ l within 6 months and/or**
- **AIDS diagnosis within 3 months of the positive HIV test.**

Patients with positive HIV test 2001-2008

	“early“ diagnosis		“late“ diagnosis		All	
	n	(%)	n	(%)	n	(%)
N	291	(17,5)	432	(25,9)	1666	(100)
Age						
<37 years	159	(19,1)	156	(18,7)	833	(50,0)
≥37 years	132	(15,8)	276	(33,1)	833	(50,0)
Sex						
Men	232	(19,4)	296	(24,7)	1196	(71,8)
Women	59	(12,5)	136	(28,9)	470	(28,2)
Transmission						
MSM	144	(26,4)	95	(17,4)	546	(32,8)
IVDU	44	(19,0)	31	(13,3)	232	(13,9)
other/missing	9	(5,8)	53	(34,2)	155	(9,3)
Heterosexual	94	(12,8)	253	(34,5)	733	(44,0)
Nationality						
High prevalence countries	18	(5,9)	97	(32,0)	303	(18,2)
A+ low prevalence countries	273	(20,0)	335	(24,6)	1363	(81,8)

% of patients with “early” and “late” diagnosis (HIV test 2001 – 2008)



AIDS diagnoses and “late” presentation

	AIDS diagnoses within 3 months of HIV diagnoses (%)	Late presenters among new AIDS diagnoses (%)
2001	14,2	42,6
2002	10,7	32,1
2003	11,4	43,3
2004	14,4	48,2
2005	15,6	49,2
2006	10,4	43,5
2007	15,6	42,7
2008	12,0	43,1

Risk factors for “late“ diagnosis 2001 - 2008 (multivariate logistic regression*)

Age

<37 years	156/833 (18.7%)	0.47 (0.37-0.60)	<0.001
≥37 years	276/833 (33.1%)	1	

Transmission

MSM	95/546 (17.4%)	0.41 (0.30-0.56)	<0.001
IVDU	31/232 (13.4%)	0.36 (0.23-0.55)	<0.001
Other/missing	53/155 (34.2%)	0.94 (0.64-1.38)	0.749
Hetero	253/733 (34.5%)	1	

Residence – Size of city

Non-metropolitan areas	308/1040 (29.6%)	1.35 (1.05-1.73)	0.019
Metropolitan area	124/626 (19.8%)	1	

* Adjusted for: Gender and nationality (prevalence areas)

Risk factors for “early“ diagnosis 2001 - 2008 (multivariate logistic regression*)

Age

<37 years	159/833	(19.1%)	1.47	(1.12-1.93)	0.006
≥37 years	132/833	(15.9%)	1		

Transmission

MSM	144/546	(26.4%)	1.82	(1.28-2.59)	<0.001
IDU	44/232	(19.0%)	1.42	(0.93-2.17)	0.104
Other/missing	9/155	(5.8%)	0.35	(0.17-0.71)	0.004
Hetero	94/733	(12.8%)	1		

Residence – Size of city

Non-metropolitan areas	195/1040	(18.8%)	1.64	(1.24-2.18)	<0.001
Metropolitan area	96/626	(15.3%)	1		

Nationality

High prevalence countries	18/303	(5.9%)	0.28	(0.17-0.47)	<0.001
Other	73/1363	(20.0%)	1		

* Adjusted for: Gender

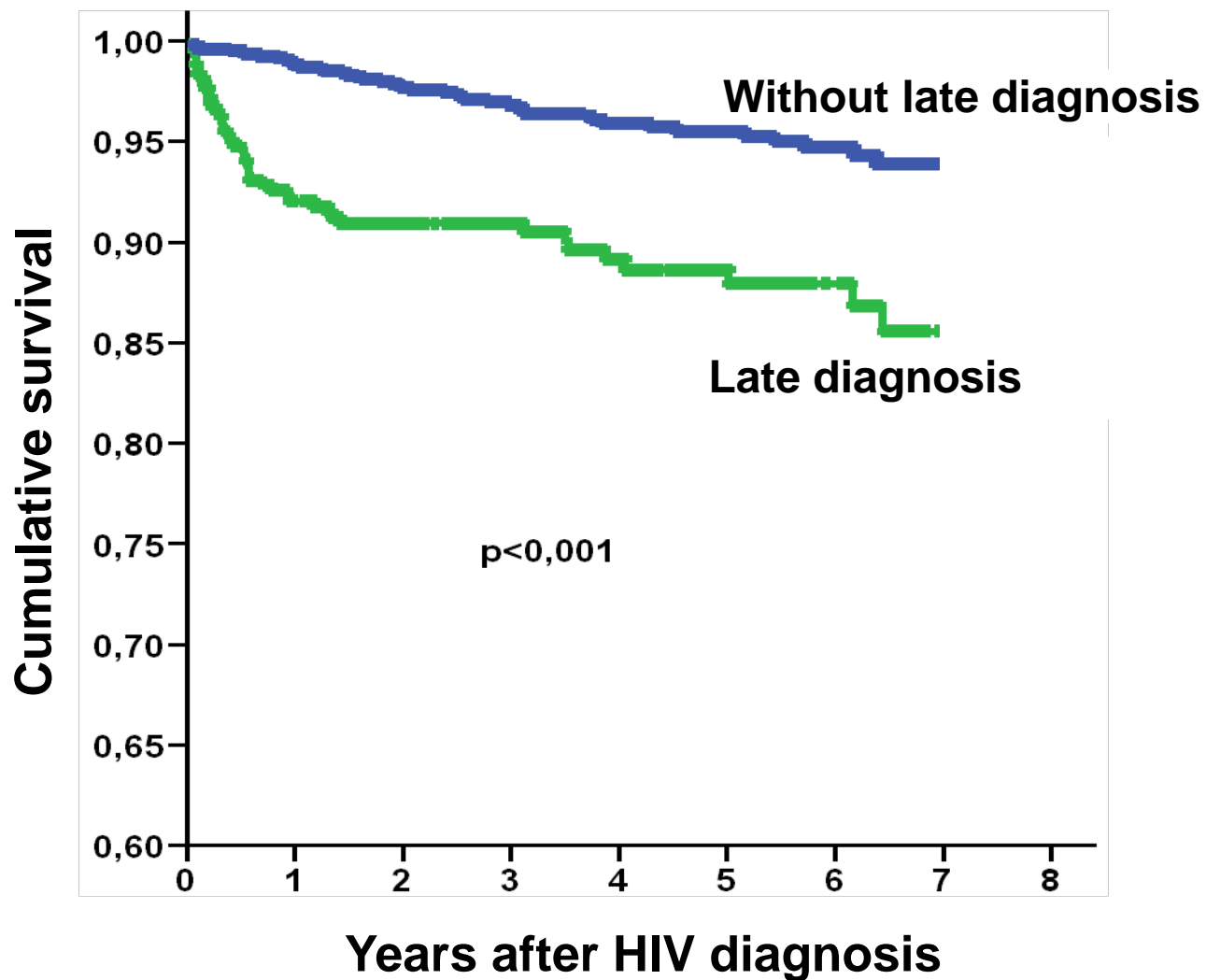
Mortality after HIV test 2001 - 2008

(Cox multivariable regression*, N=90/1666)

	<i>n</i>	<i>(%)</i>	<i>HR</i>	<i>(95% CI)</i>	<i>p-value</i>
<i>Transmission</i>					
MSM	16/ 546	(2.9)	0.77	(0.40-1.50)	0.448
IDU	26/ 232	(11.2)	3.66	(2.03-6.59)	<0.001
Other/missing	19/ 155	(12.3)	2.71	(1.49-4.93)	0.001
Hetero	29/ 733	(4.0)	1		
<i>Diagnosis of HIV infection</i>					
„Late“ Diagnosis	45/ 432	(10.4)	3.36	(2.17-5.20)	<0.001
Not „late“ Diagnosis	45/1234	(3.7)	1		

* Adjusted for: Age, gender, nationality and residency

Survival after HIV test 2001 – 2008: relationship to time point of diagnosis



Two major limitations

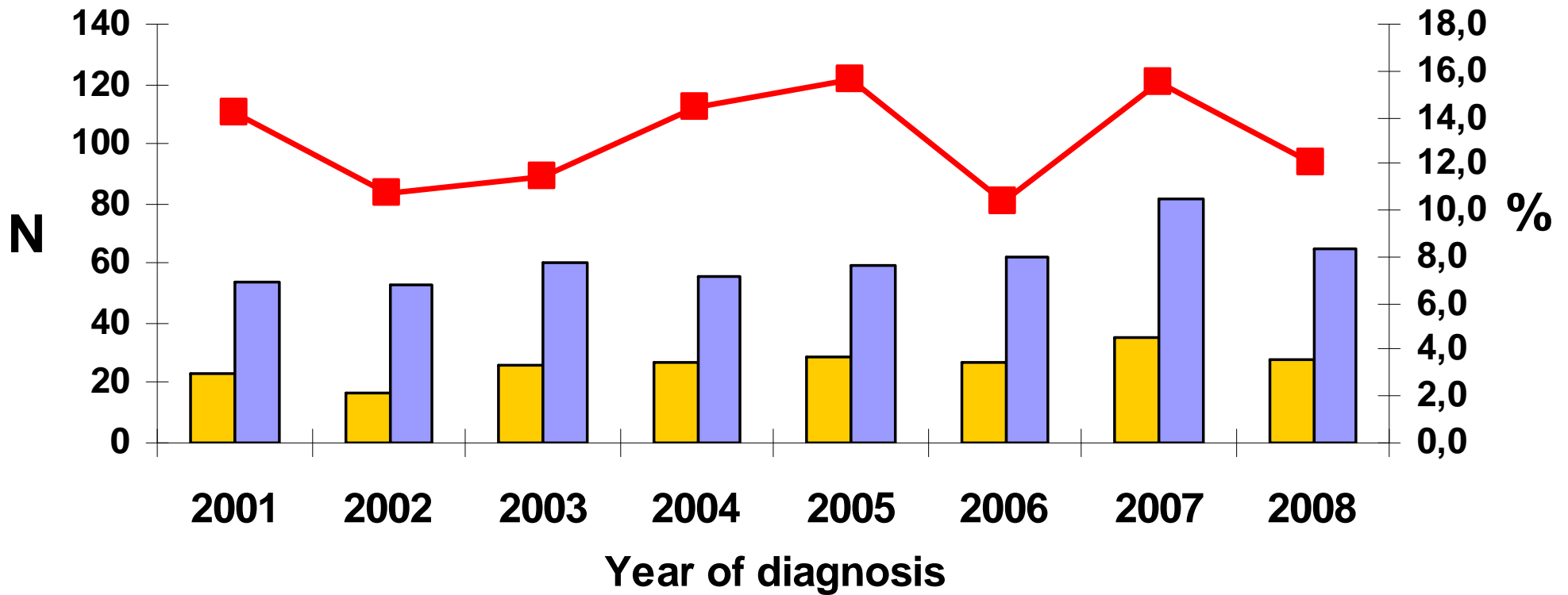
- **Decentralized data collection in treatment centres with sparse plausibility checks**
- **Patients with missing values were either excluded or handles extra category**

Conclusions

- **Low proportion of “early” diagnosis of HIV infection, without increase in recent years.**
- **High proportion of “late” diagnosis of HIV infection, without decrease in recent years.**
- **Identified risk factors for “early” and “late” diagnosis as basis for a more efficacious testing.**
- **Substantially reduced survival in patients with “late” diagnosis of HIV infection.**

■ **Thank you**

Proportion of patients with “late” diagnosis



■ AIDS late diagnoses ■ All AIDS diagnoses —■ % late diagnoses of HIV test