

Occurrence of Inhibitors Among U.S. Males with Hemophilia A, 1999 - 2003

Data from the Universal Data Collection System

Division of Hereditary Blood Disorders
National Center on Birth Defects and Developmental Disabilities



2004N-0033

TS 8

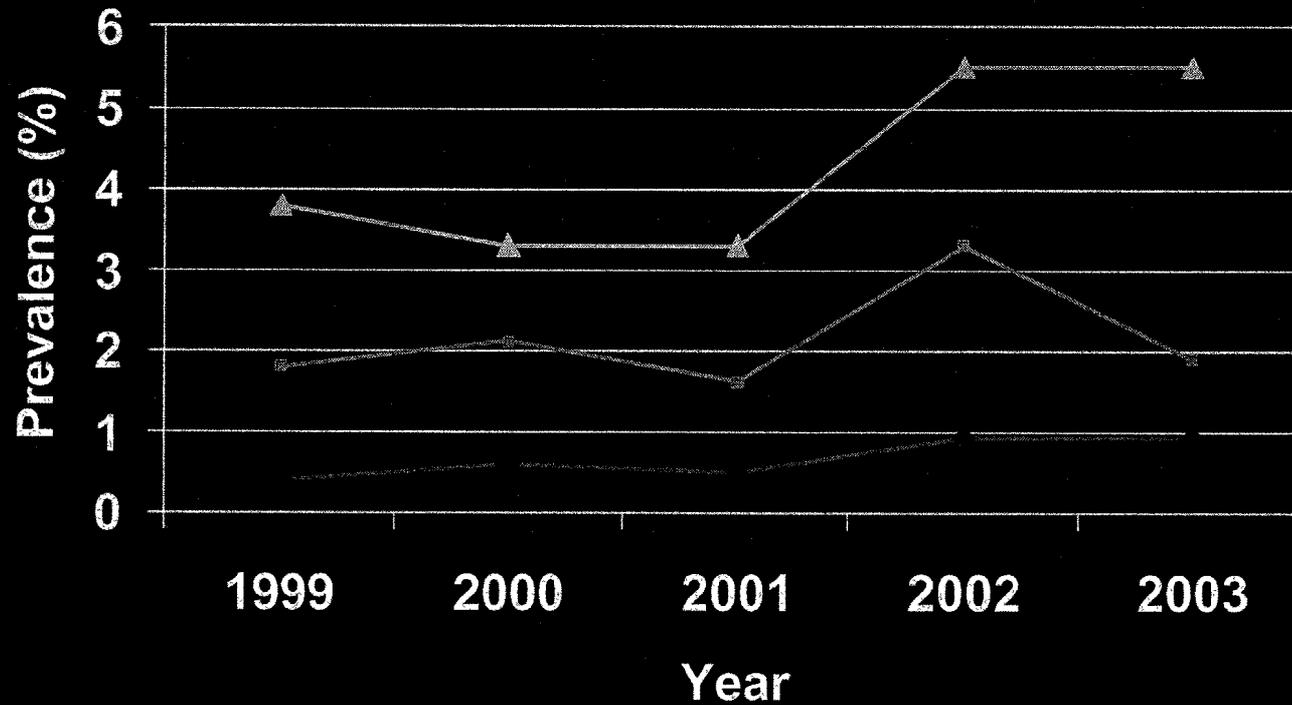
Data Sources

- All males with hemophilia A in 135 U.S. HTC_s who have participated in UDC, 1999-2003
 - Cross-sectional annual prevalence of inhibitors in a total of 10,200 participants
- A cohort of males with hemophilia A who participated regularly in UDC, 1999-2003
 - Incident rate of inhibitors among a total of 1,224 frequent HTC users with hemophilia A
 - Incident rates for select patient characteristics

Persons in Surveillance by Year and Hemophilia Severity

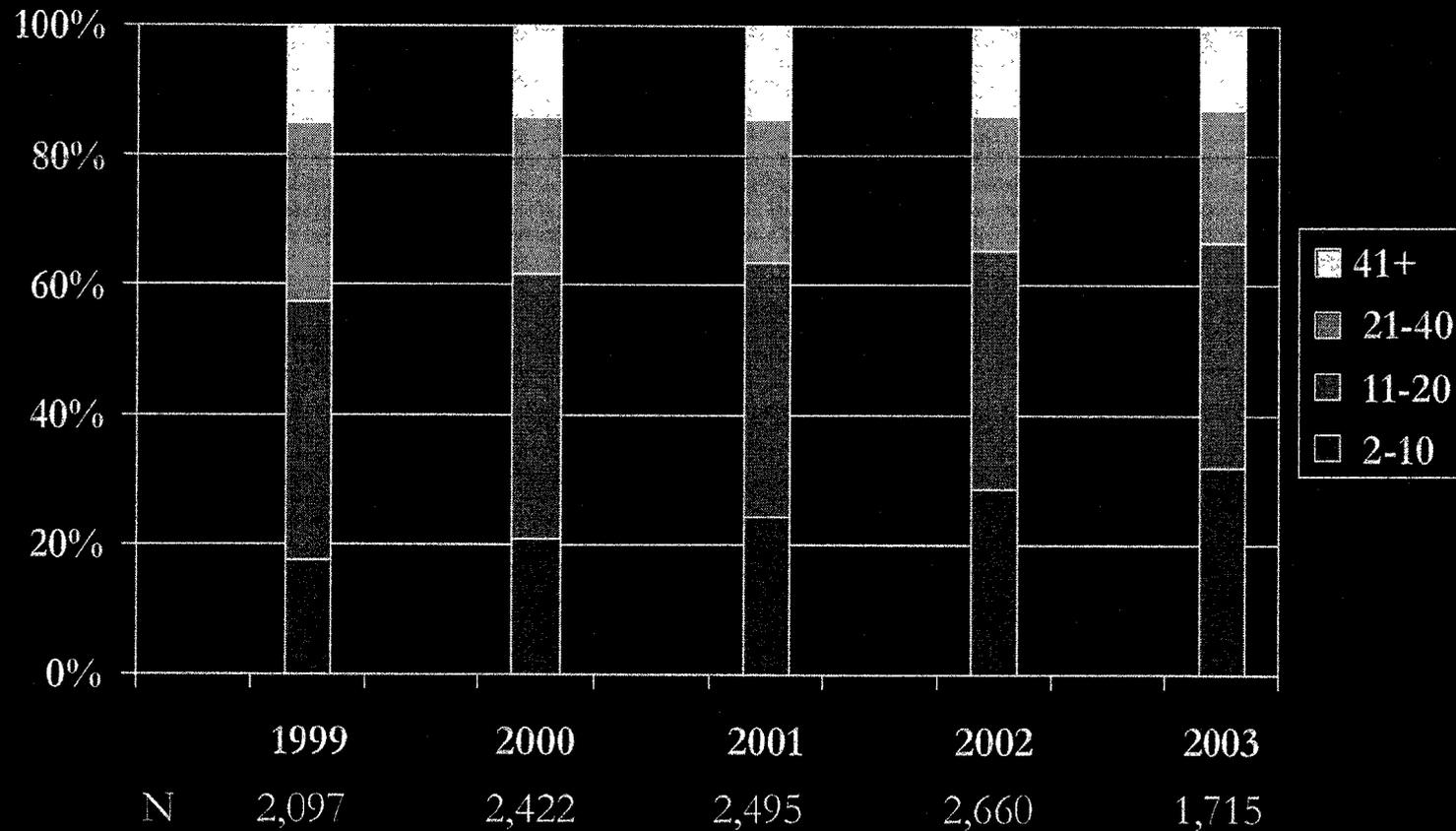
	1999	2000	2001	2002	2003
Mild	565	706	780	872	559
Moderate	619	715	745	781	518
Severe	1833	2279	2312	2515	1660

Prevalence of Low Titer (0.5 - 5BU) Inhibitors In Males with Hemophilia A

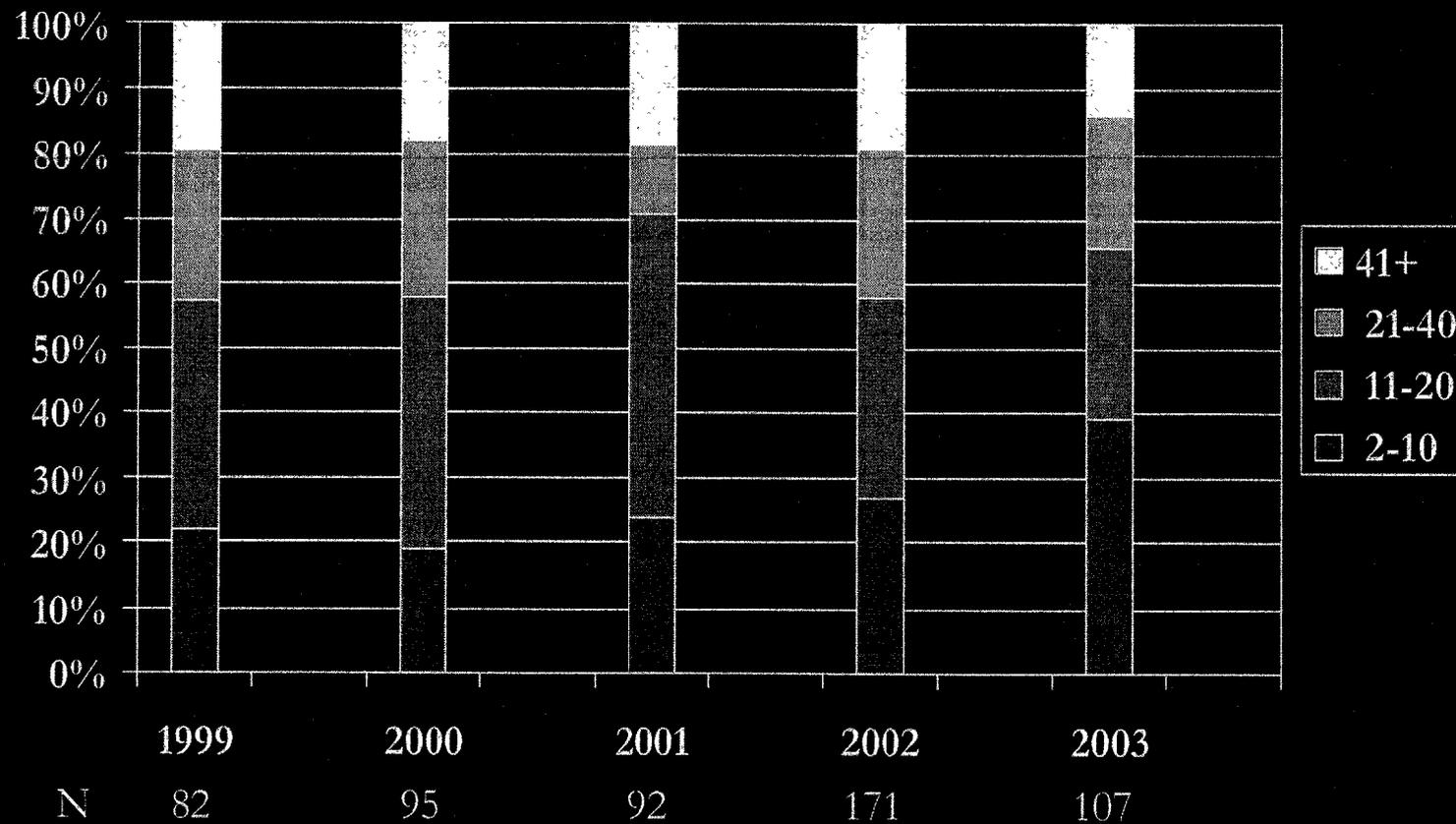


— Mild — Moderate — Severe

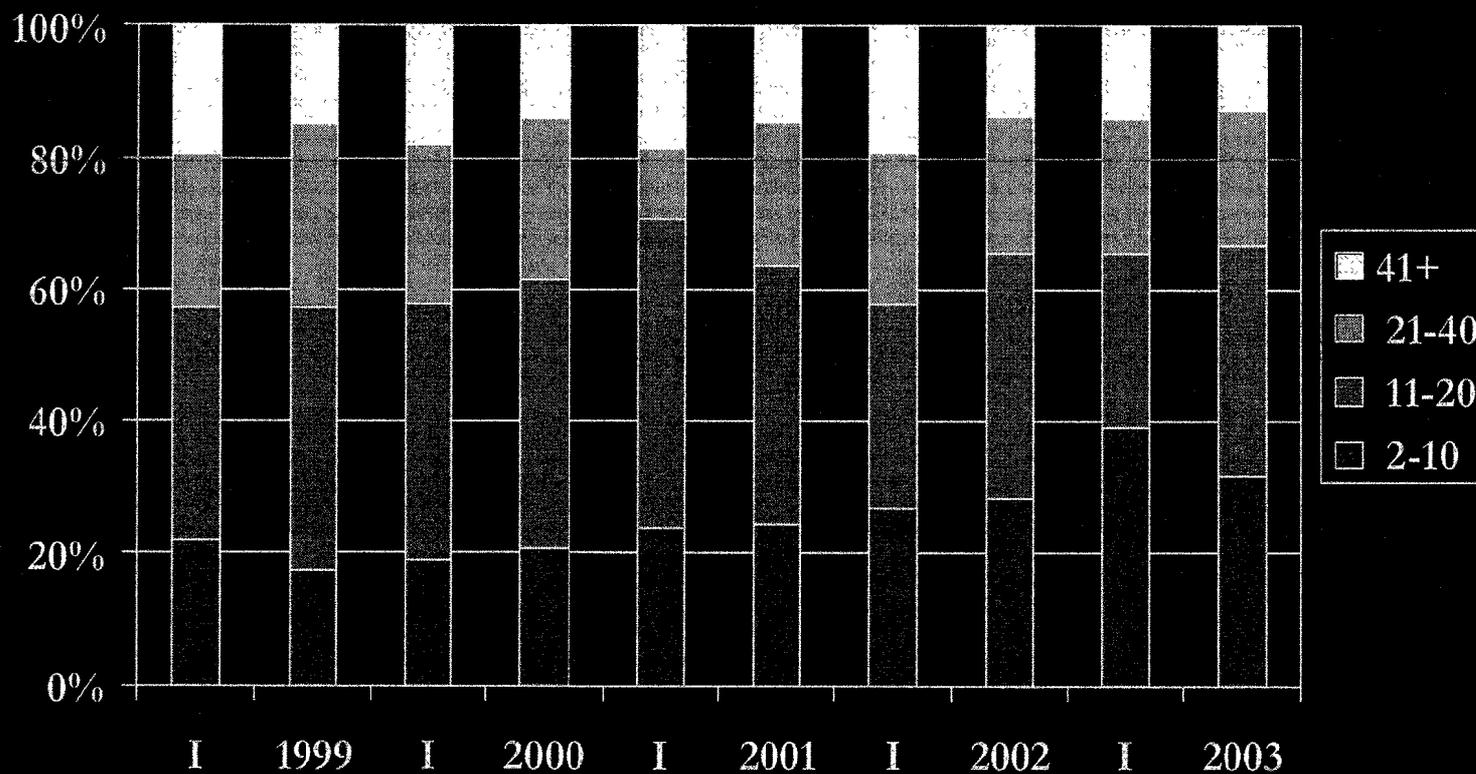
Age Distribution of Males with Hemophilia A



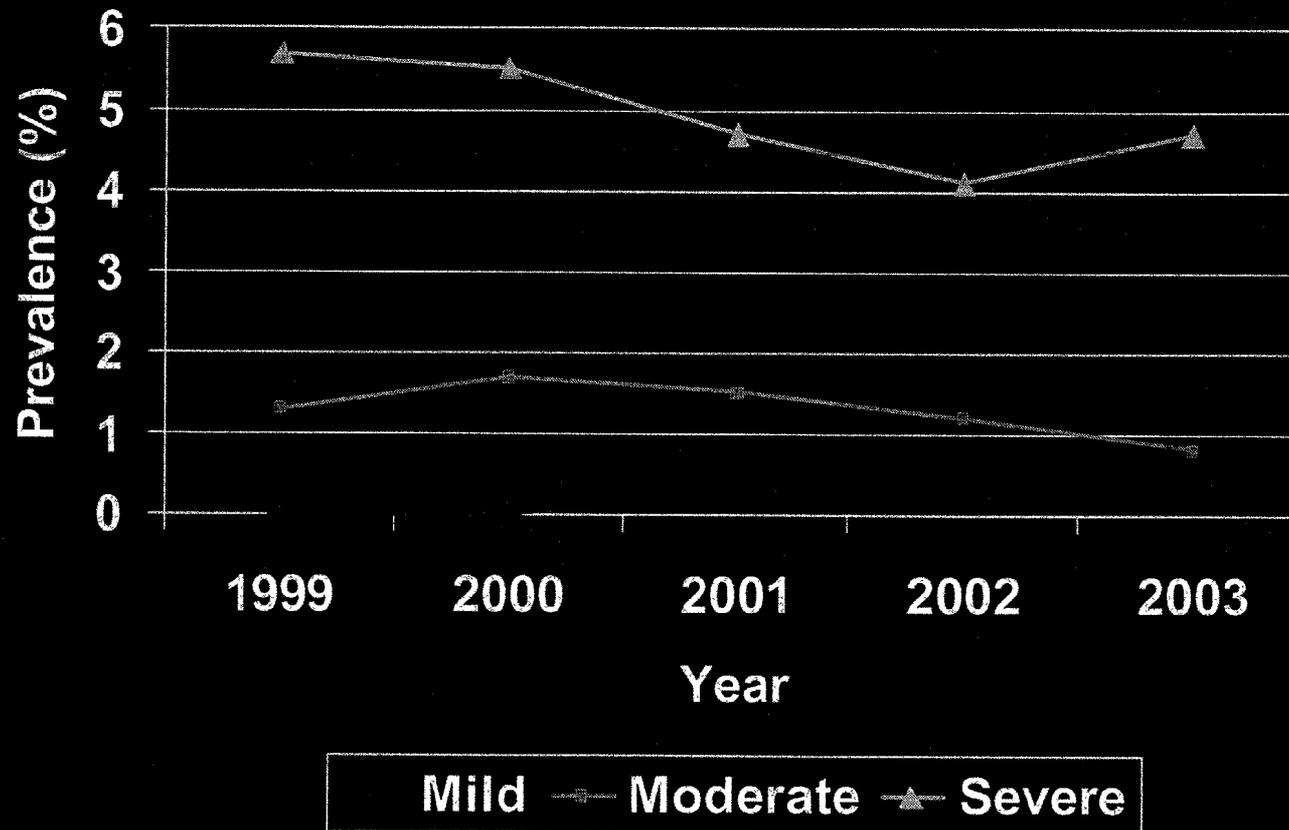
Age Distribution of Males with Hemophilia A and Low Titer Inhibitors



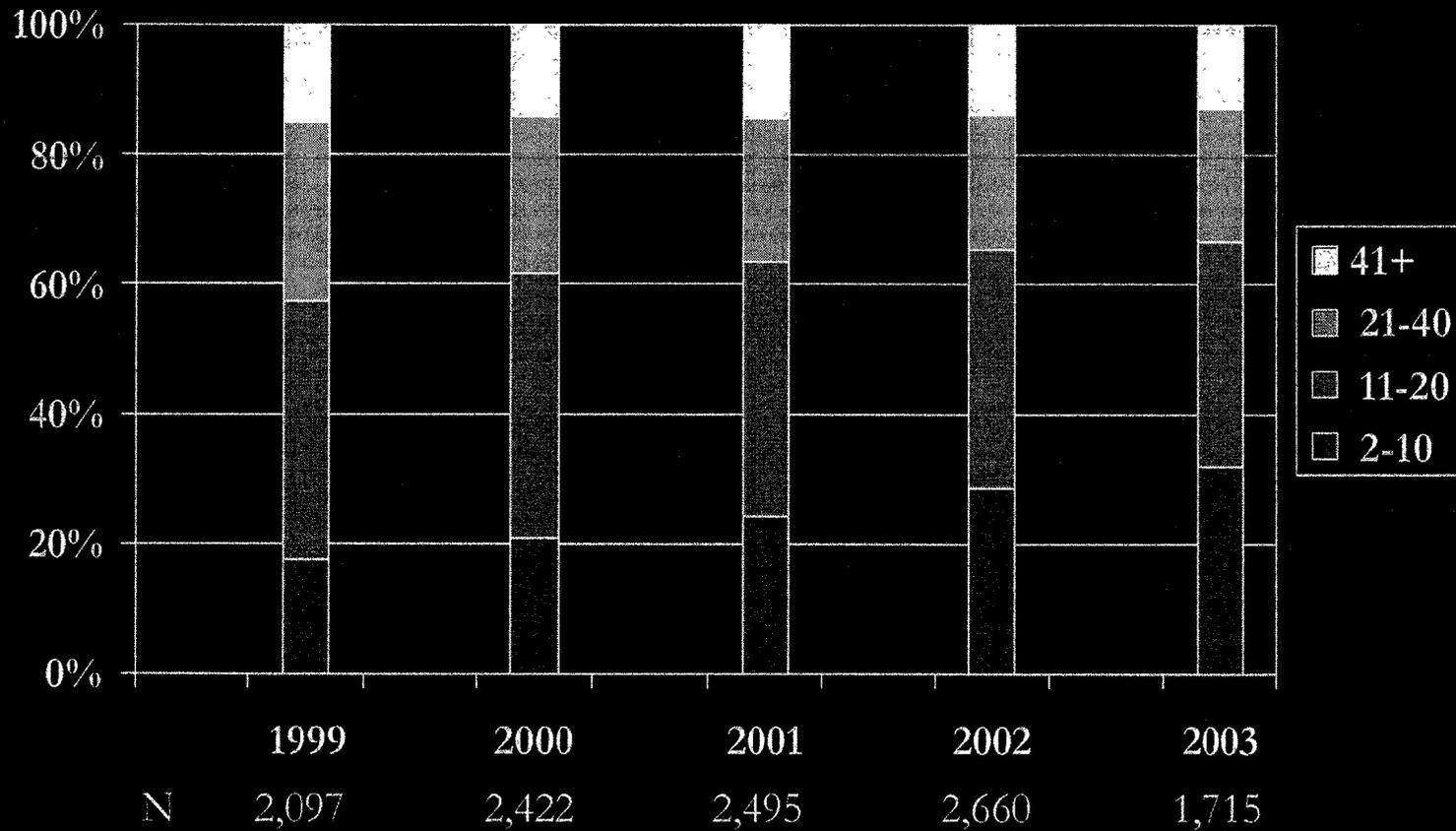
Age Distribution of Males with Hemophilia A and Low Titer Inhibitors



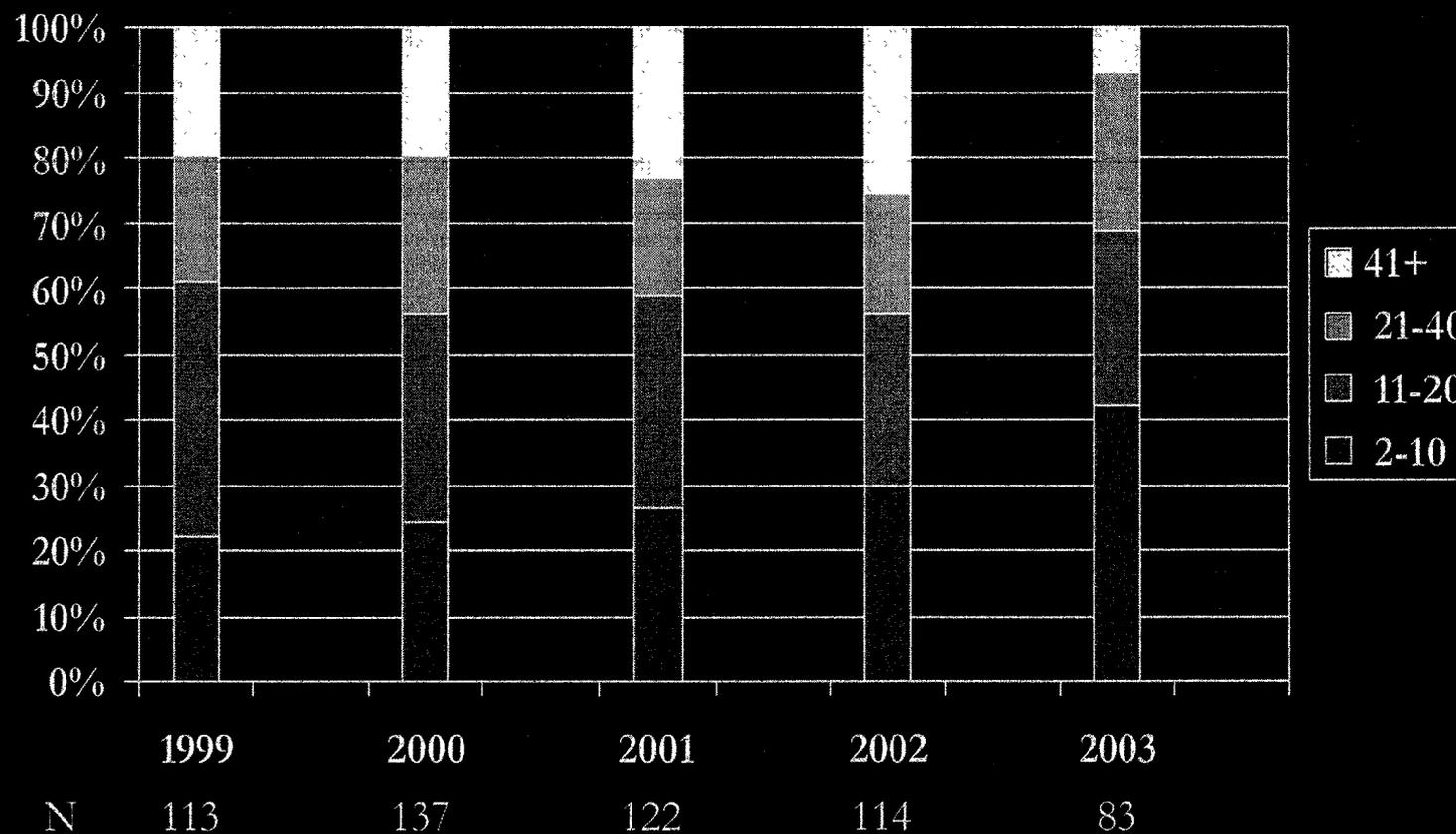
Prevalence of High Titer (>5BU) Inhibitors In Males with Hemophilia A



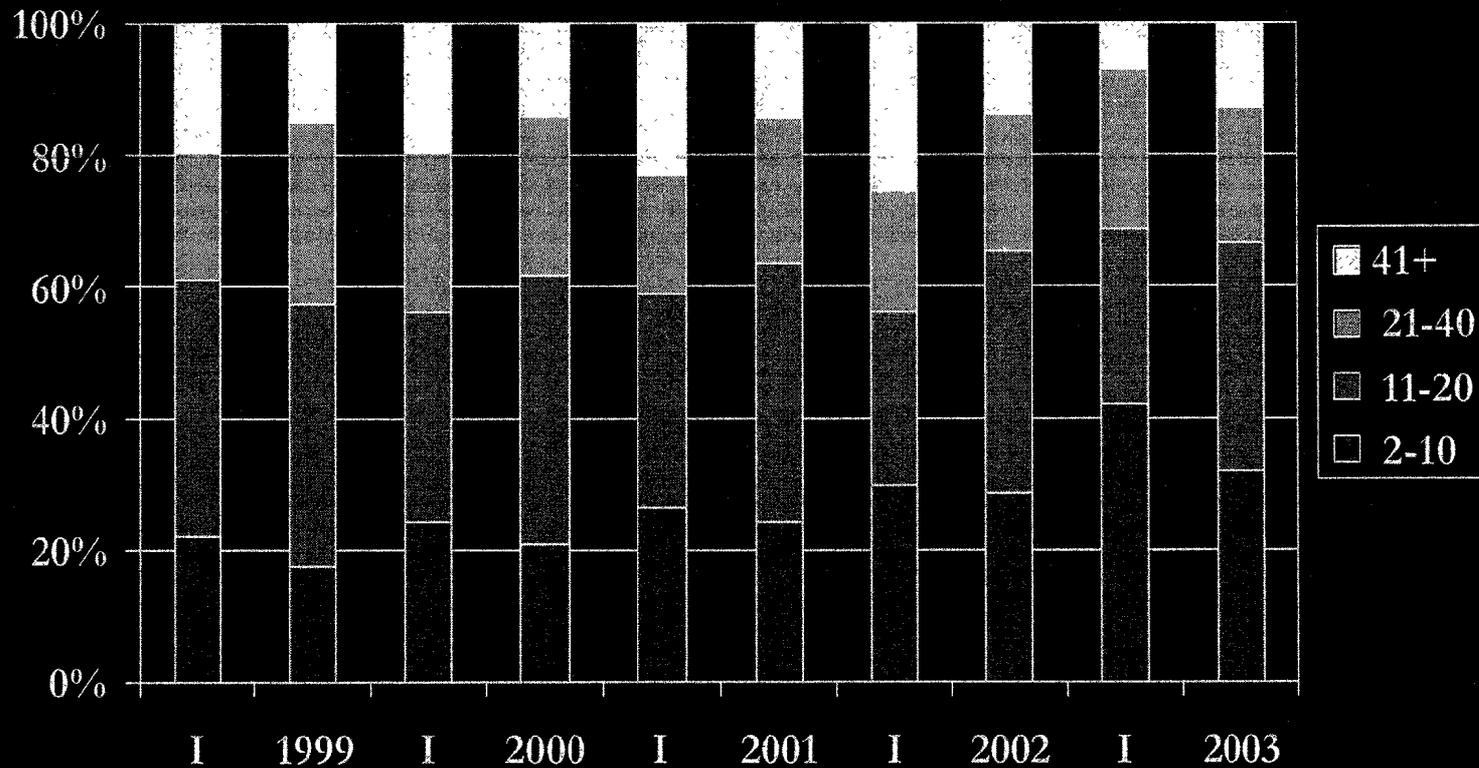
Age Distribution of Males with Hemophilia A



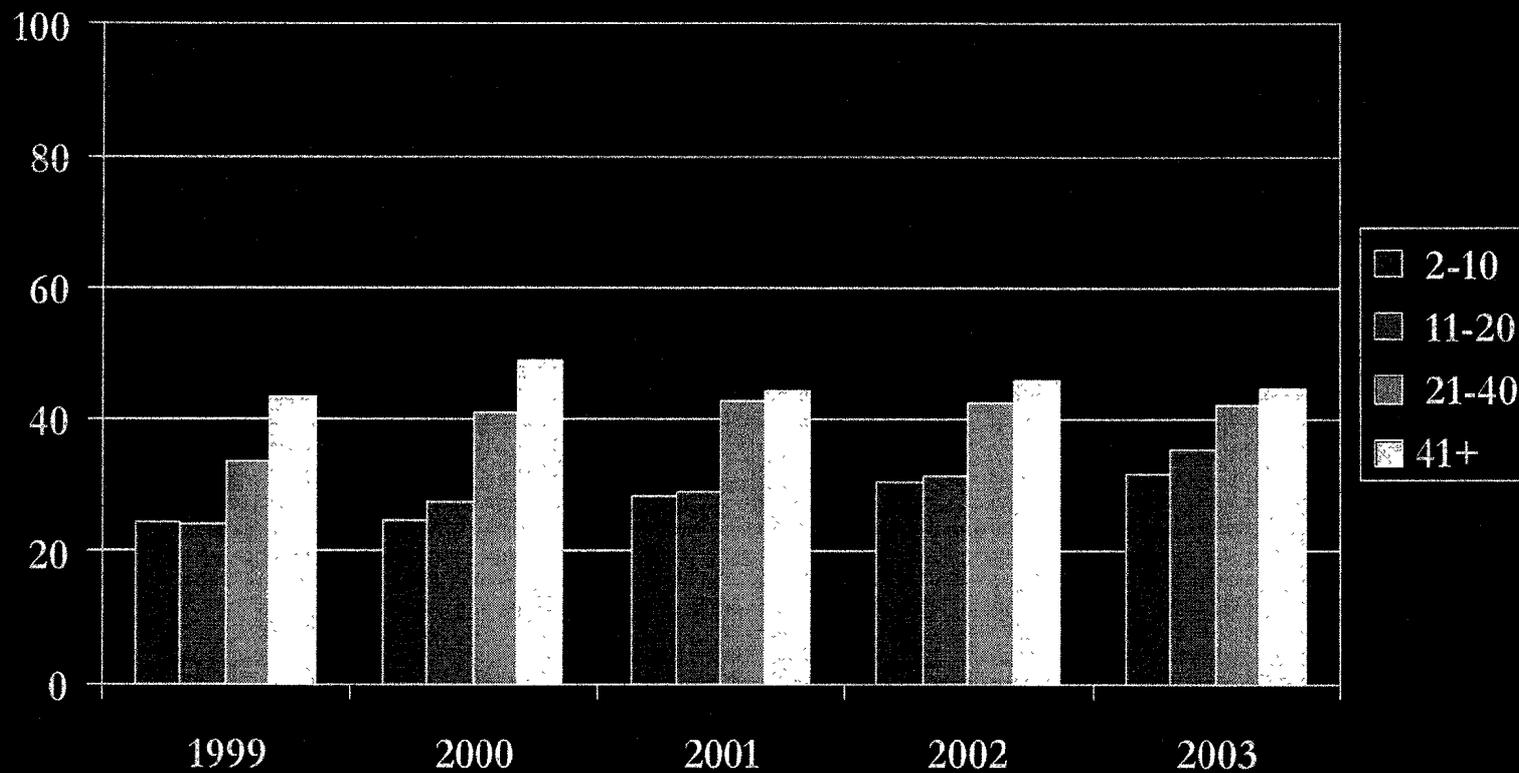
Age Distribution of Males with Hemophilia A and High Titer Inhibitors



Age Distribution of Males with Hemophilia A and those with High Titer Inhibitors



Proportion of Males with Hemophilia A with Missing Data on Inhibitors by Age



Cohort Selection

- Males, 2 years and older with 4 or more UDC visits
- Demographic and clinical characteristics of the cohort were similar to those of all participants
- Persons with < 2 titer measures or who had inhibitor in the past were excluded

Findings

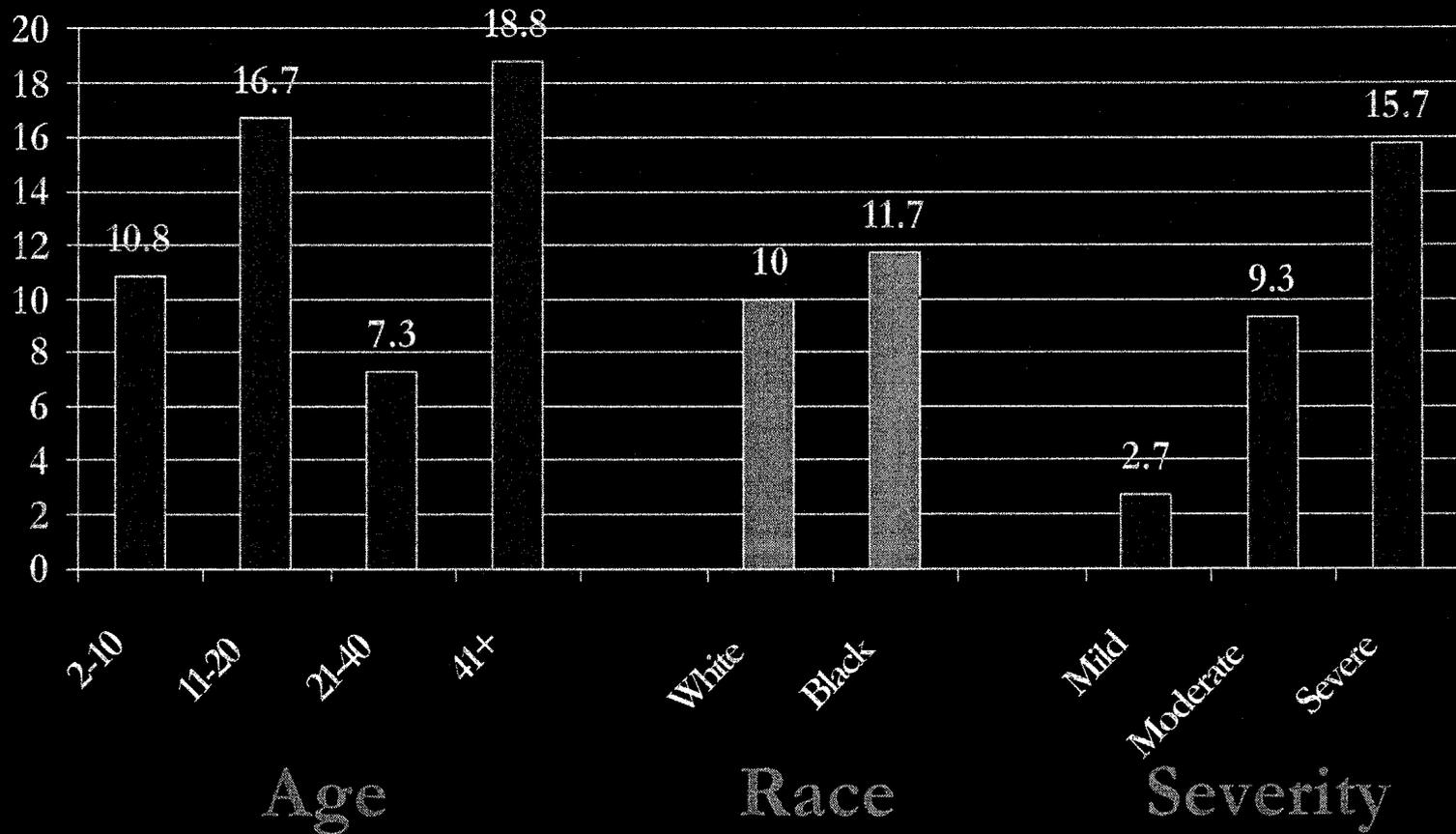
- 917 (75%) of the 1,224 cohort members with hemophilia A were eligible for study
- There were 65 (7.1%) prevalent cases
- The remaining 852 persons had an average of 3.7 years of follow-up (total 3,186 PY)
- 41 low titer inhibitor cases occurred for an overall rate of 12.9 cases per 1,000 PY
- 8 high titer inhibitor cases occurred for an overall rate of 2.5 cases per 1,000 PY

Incidence of Low Titer Inhibitors in Persons with Hemophilia A by Year

Year	Number of cases	Incidence rate*
1999	4	5.9
2000	11	13.7
2001	9	11.5
2002	13	29.2
2003	4	30.1

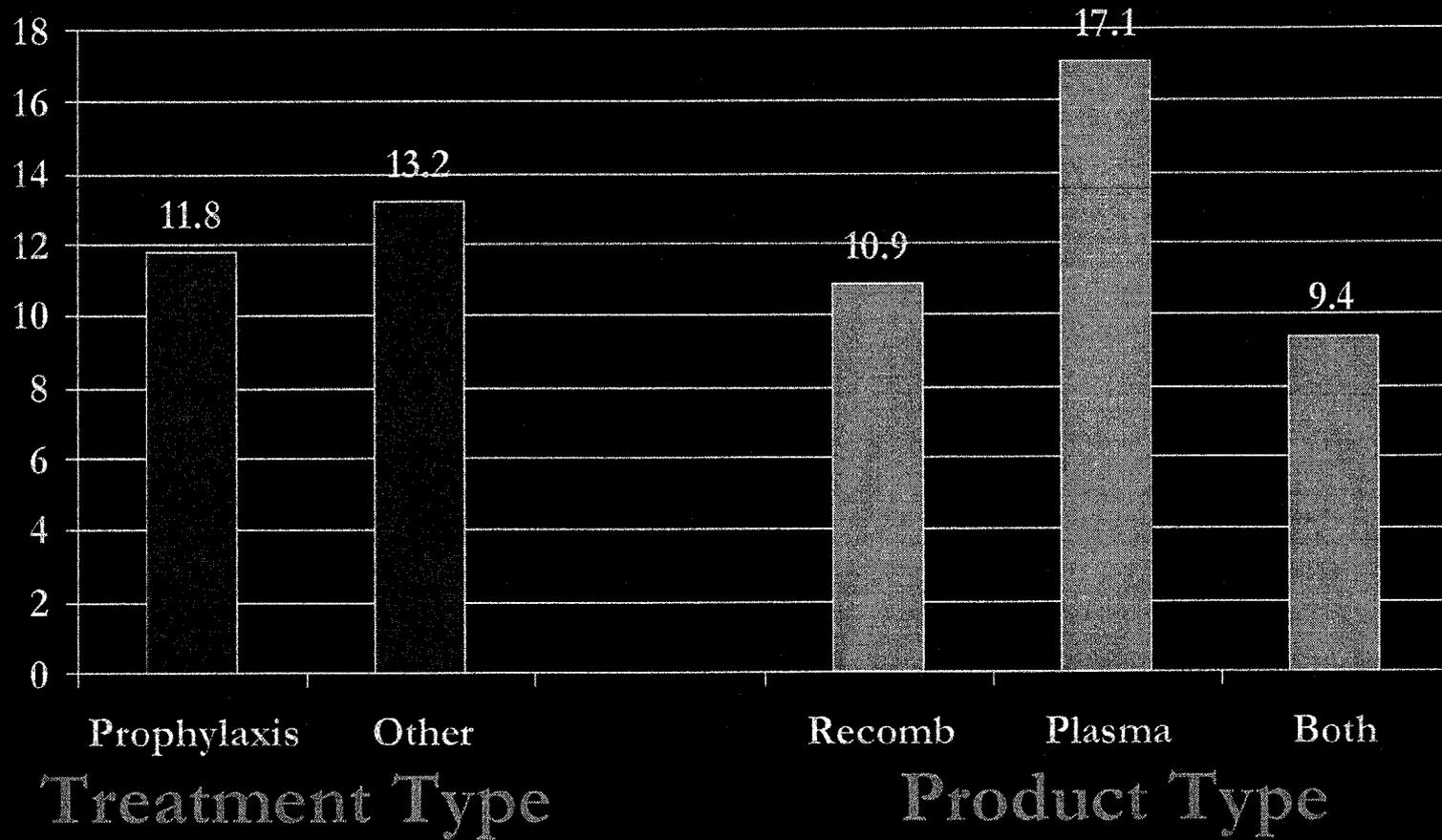
*Cases per 1,000 PY

Low Titer Inhibitor Incidence Rates* by Age, Race and Severity



*Cases per 1,000 PY

Low Titer Inhibitor Incidence Rates* by Treatment and Product Type



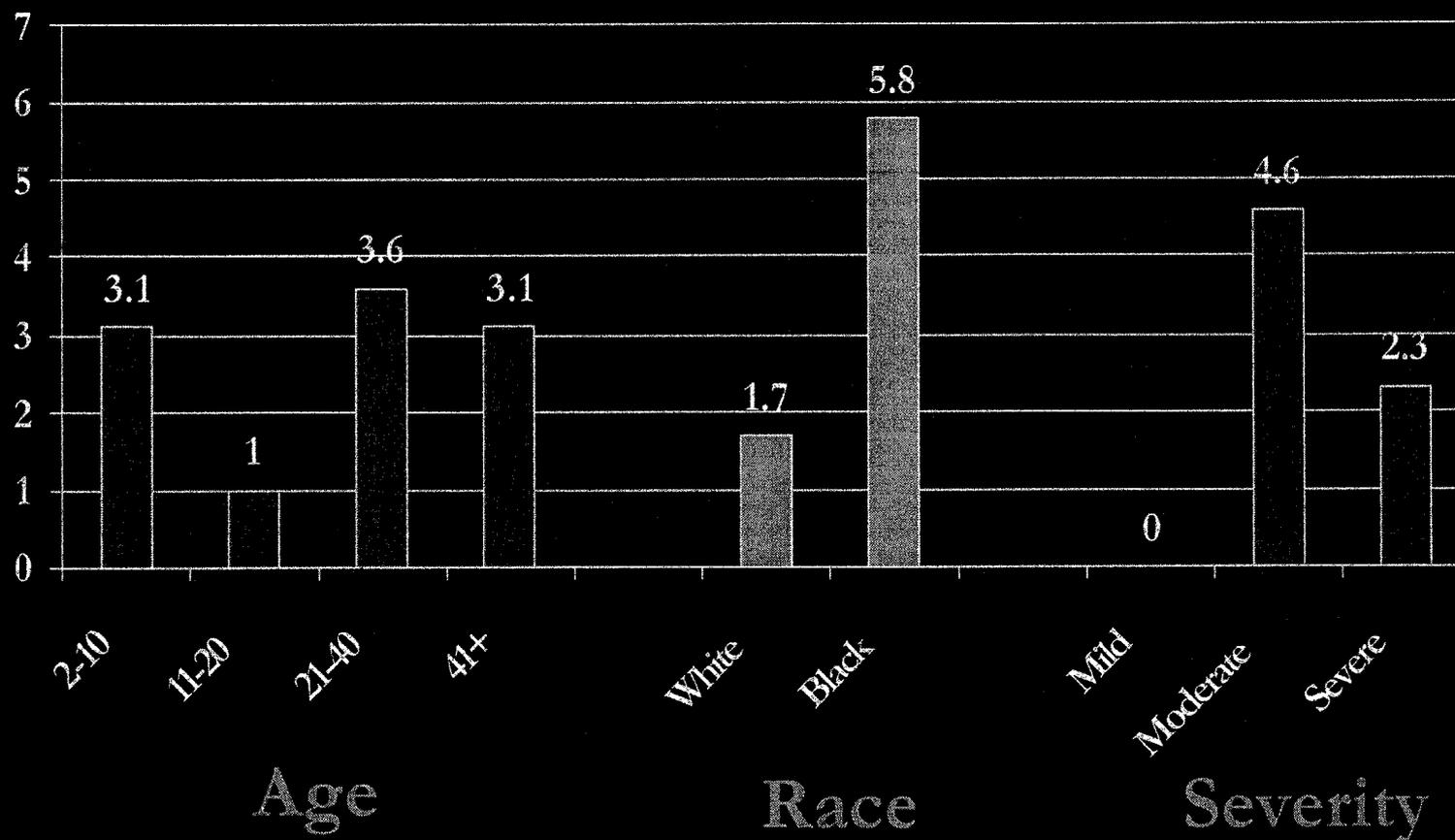
*Cases per 1,000 PY

Incidence of High Titer Inhibitors in Persons with Hemophilia A by Year

Year	Number of cases	Incidence rate*
1999	2	3.0
2000	3	3.7
2001	0	0
2002	2	4.6
2003	1	7.5

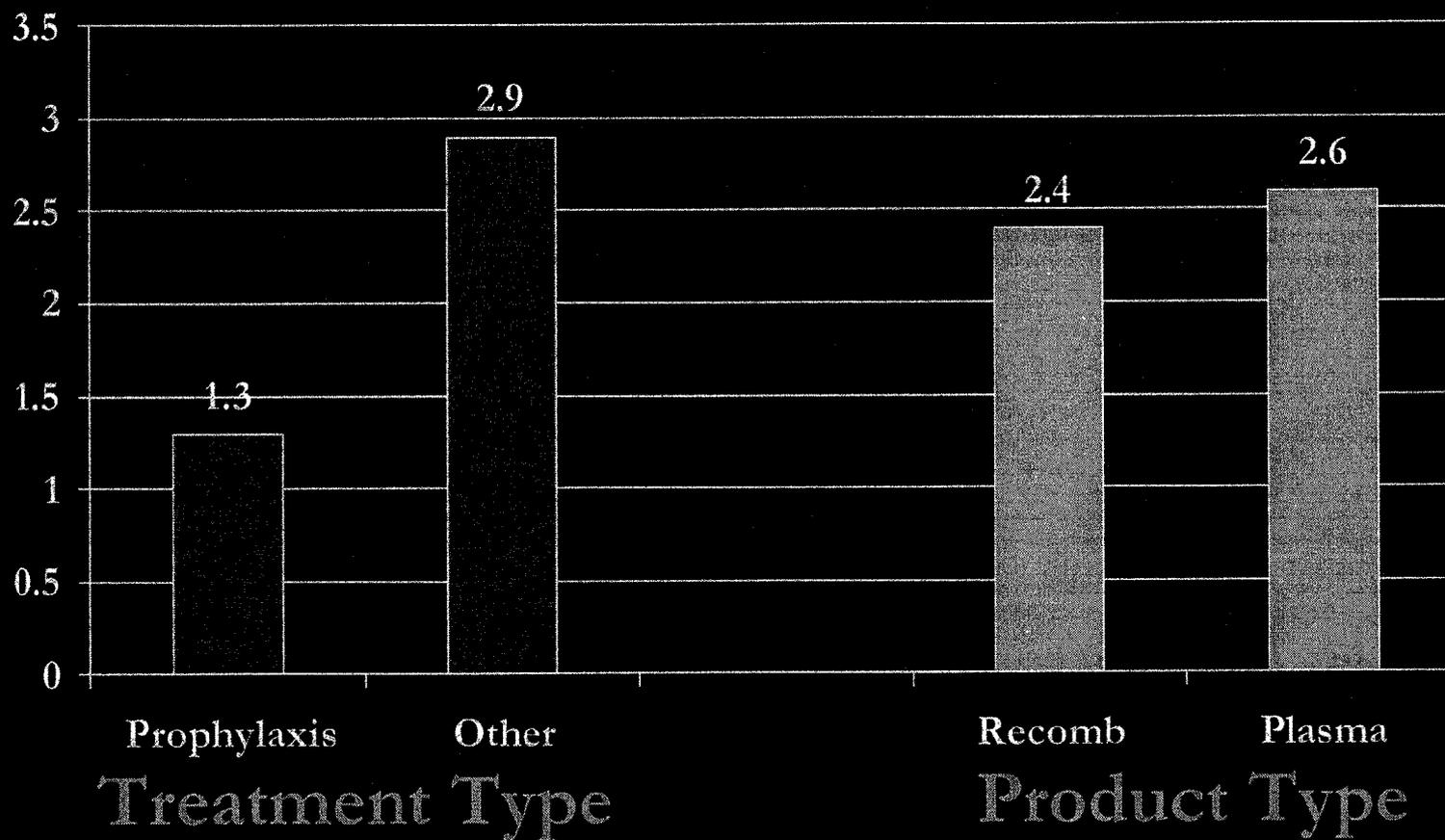
*Cases per 1,000 PY

High Titer Inhibitor Incidence Rates* by Age, Race and Severity



*Cases per 1,000 PY

High Titer Inhibitor Incidence Rates* by Treatment and Product Type



*Cases per 1,000 PY

Summary

- Incidence of inhibitors is quite low – about 0.5% per year for low and about 0.1% per year for high titer inhibitors
- Rates appear to be increasing over time
- Low titer incidence highest in 41+ year olds
- High titer incidence highest in blacks
- Incidence of inhibitors does not appear to be higher among recombinant product users

