



**KDIGO-CVD Conference
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CVD in CKD : Asian Experience

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Contents of the Presentation

1. General Japanese population

Prevalence of “lifestyle related disease”

Trends of BMI & proteinuria among screened subjects

Studies on CKD vs. CVD

eGFR, proteinuria, and underlying kidney disease

2. ESRD population: demographics

The Japanese Society for Dialysis Therapy (JSDT) registry

Underlying kidney disease, age, gender

Causes of death: GP vs. ESRD

3. Factors related to increased mortality risk among ESRD patients

Pre-HD blood pressure & pulse rate

RAS vs. non-RAS drugs

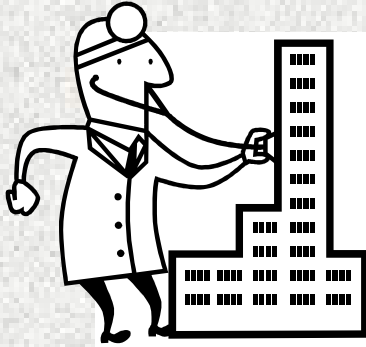
Treatment of hypertension: ongoing RCT

4. Asian Forum of CKD Initiative (ACKDI)

Pan Asian CKD registry

Rapid increase in ESRD patients in China

Lifestyle related disease



Hypertension 3,500

DM 740

Pre-DM 880

Dyslipidemia 600

Obesity 1,100

Hyperuricemia 500

Gout 30~50

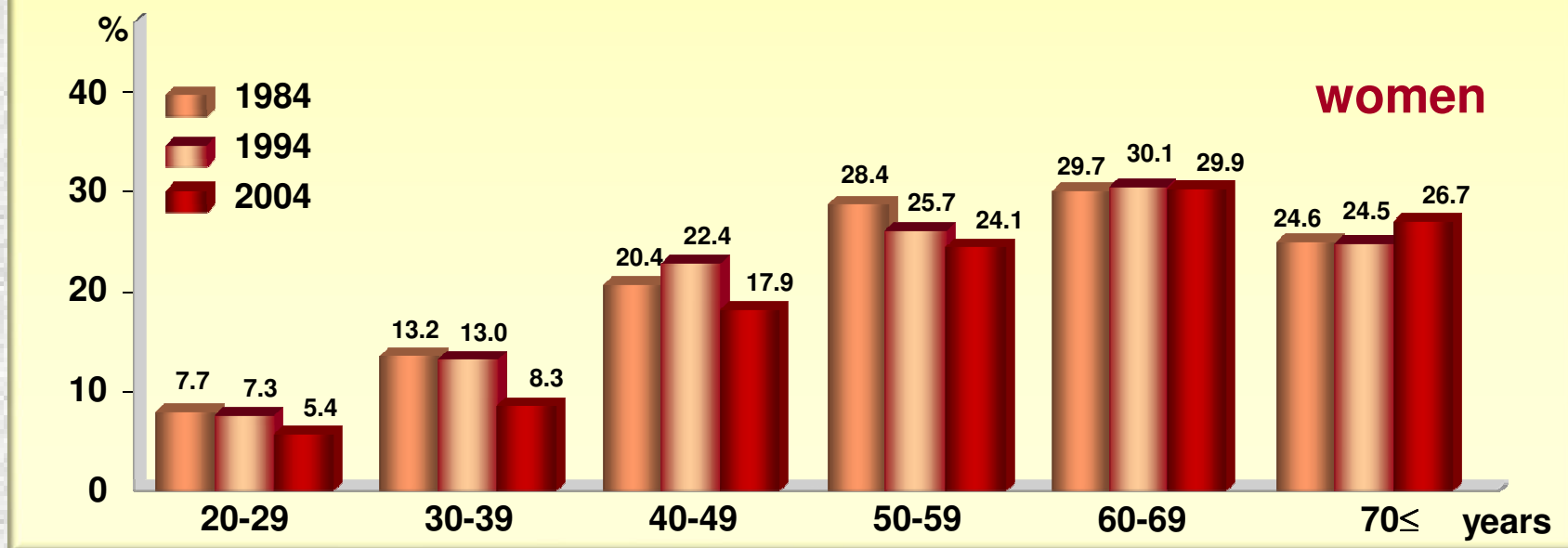
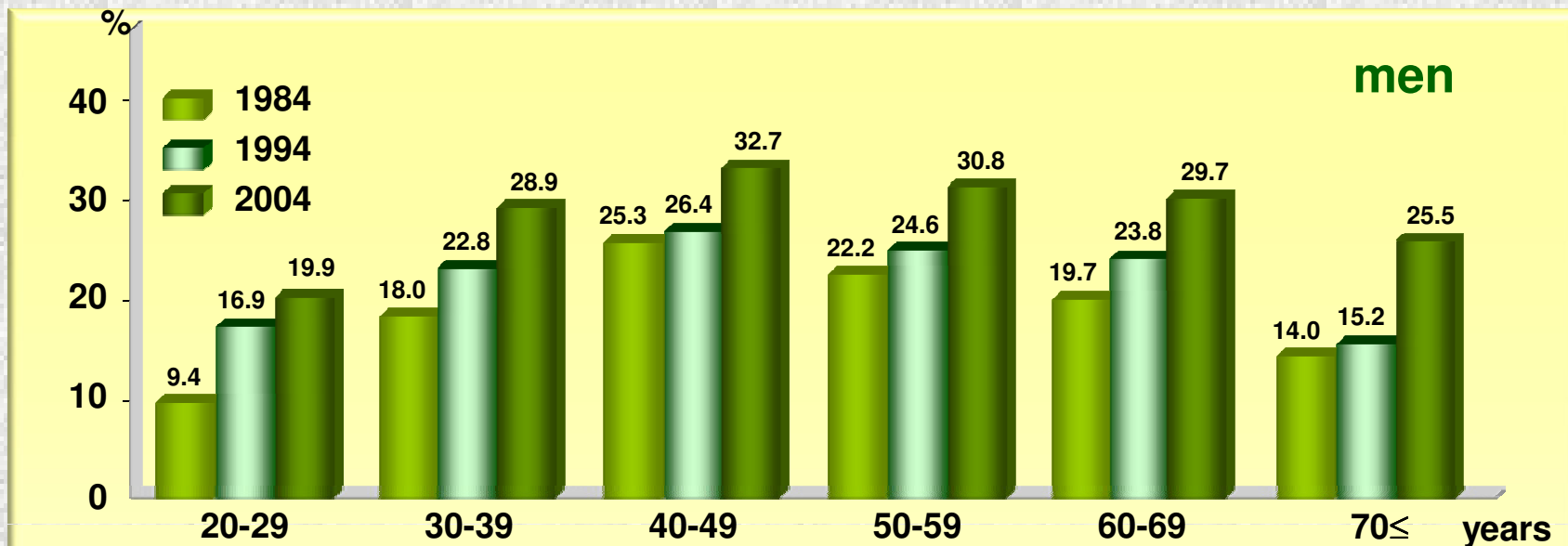
CKD 1,330

X10,000

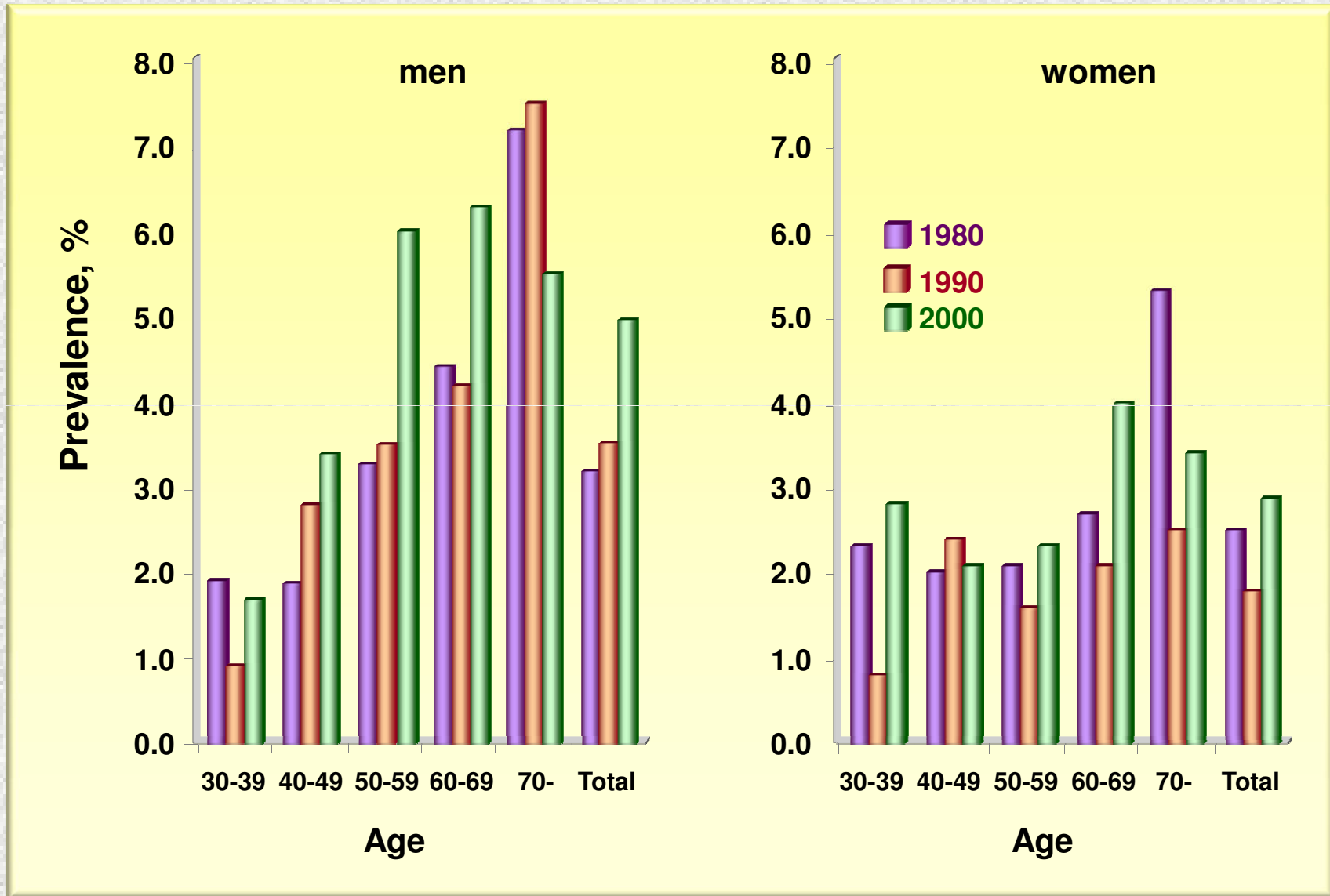


Japanese eGFR formula

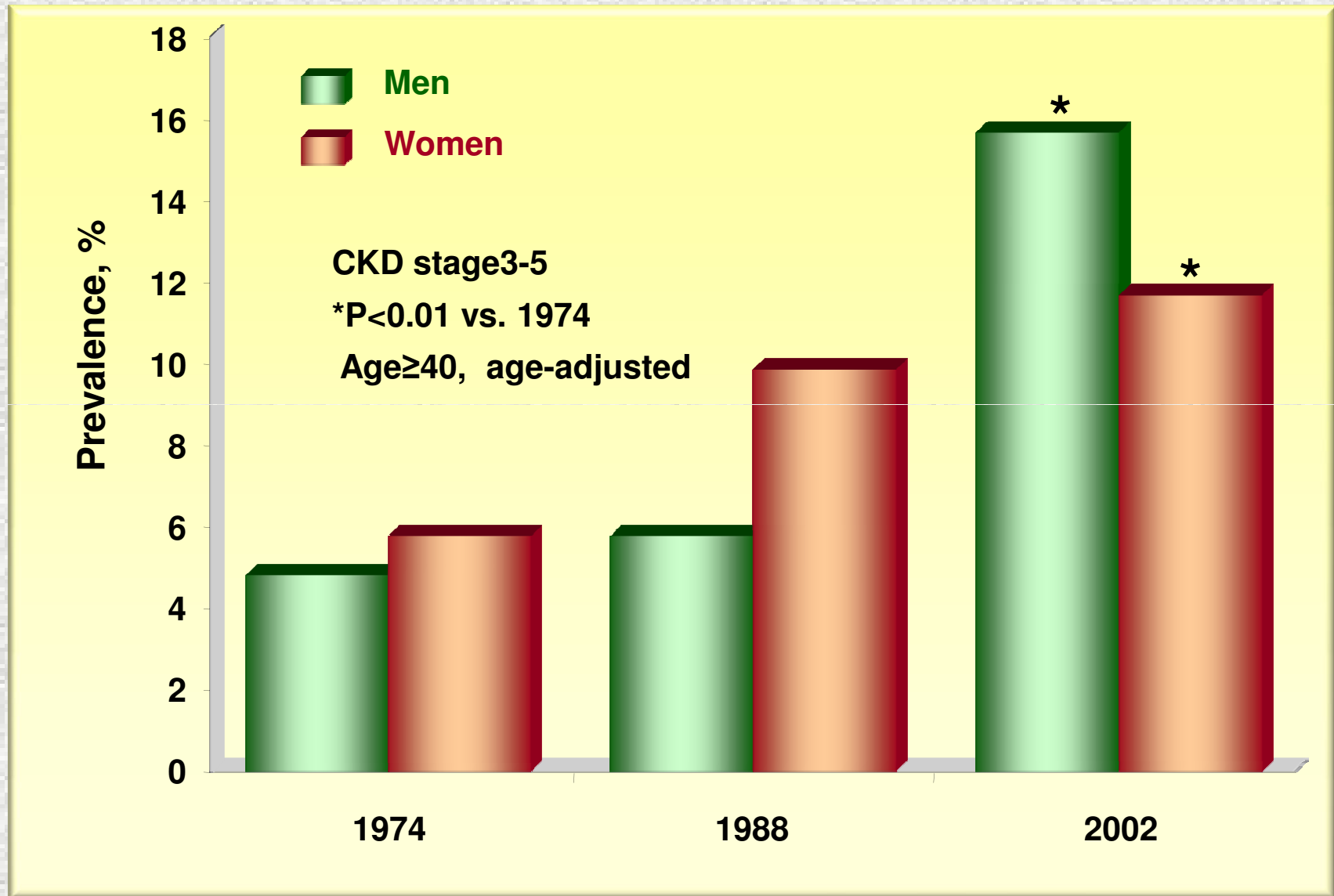
Prevalence of obesity, BMI \geq 25



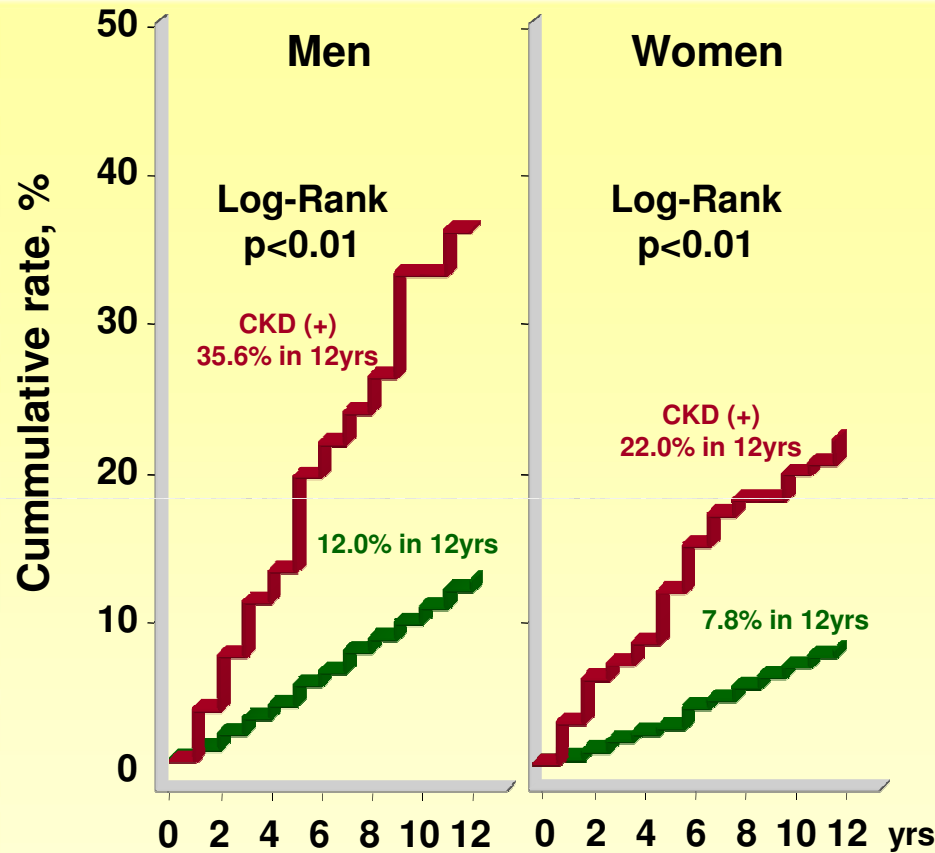
Prevalence of Proteinuria



CKD Prevalence: Hisayama Study

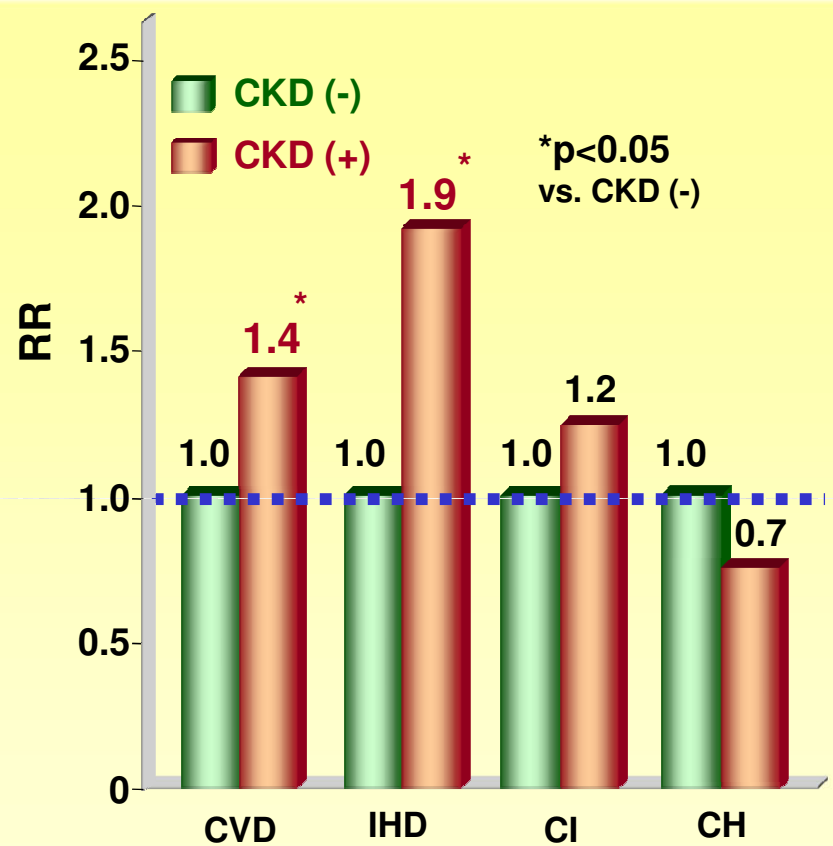


CKD vs CVD :Hisayama study



N=2,634, 1988-2000, not-adjusted

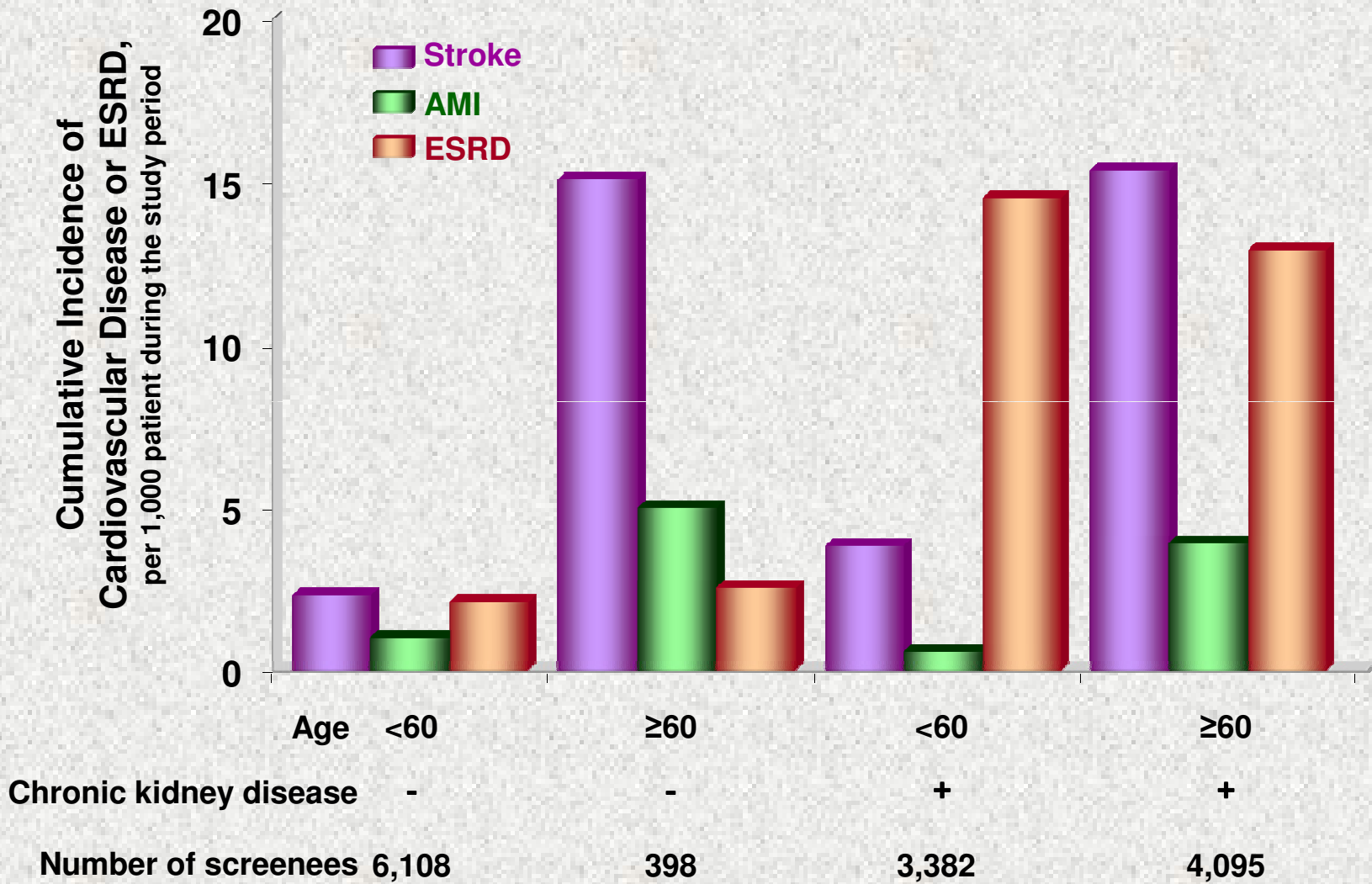
CKD (+) = GFR < 60 ml/min/1.73m²



N=2,634, 1988-2000, adjusted

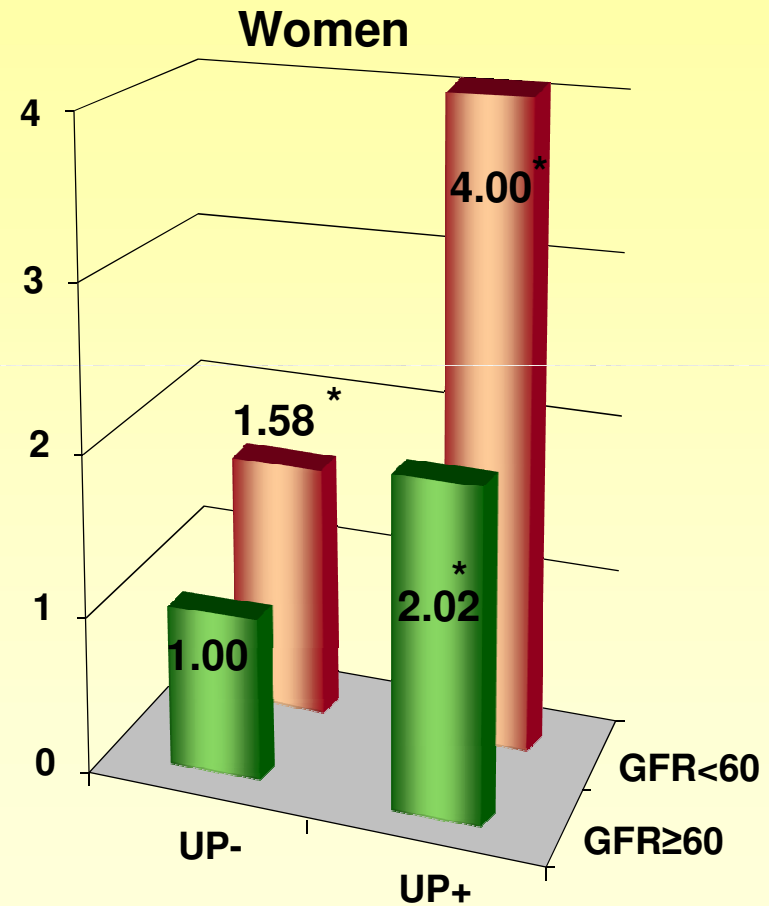
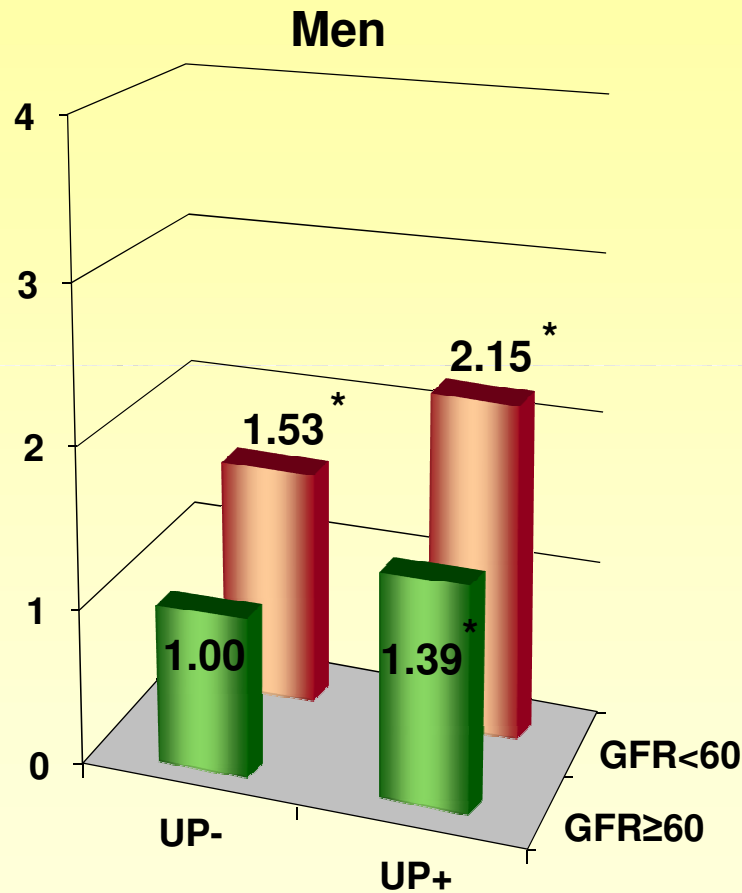
†age, sex, hypertension, ECG, DM, BMI, TC, TG, HDL-C, homocysteine, hs-CRP, smoking, alcohol

CKD vs CVD :Okinawa



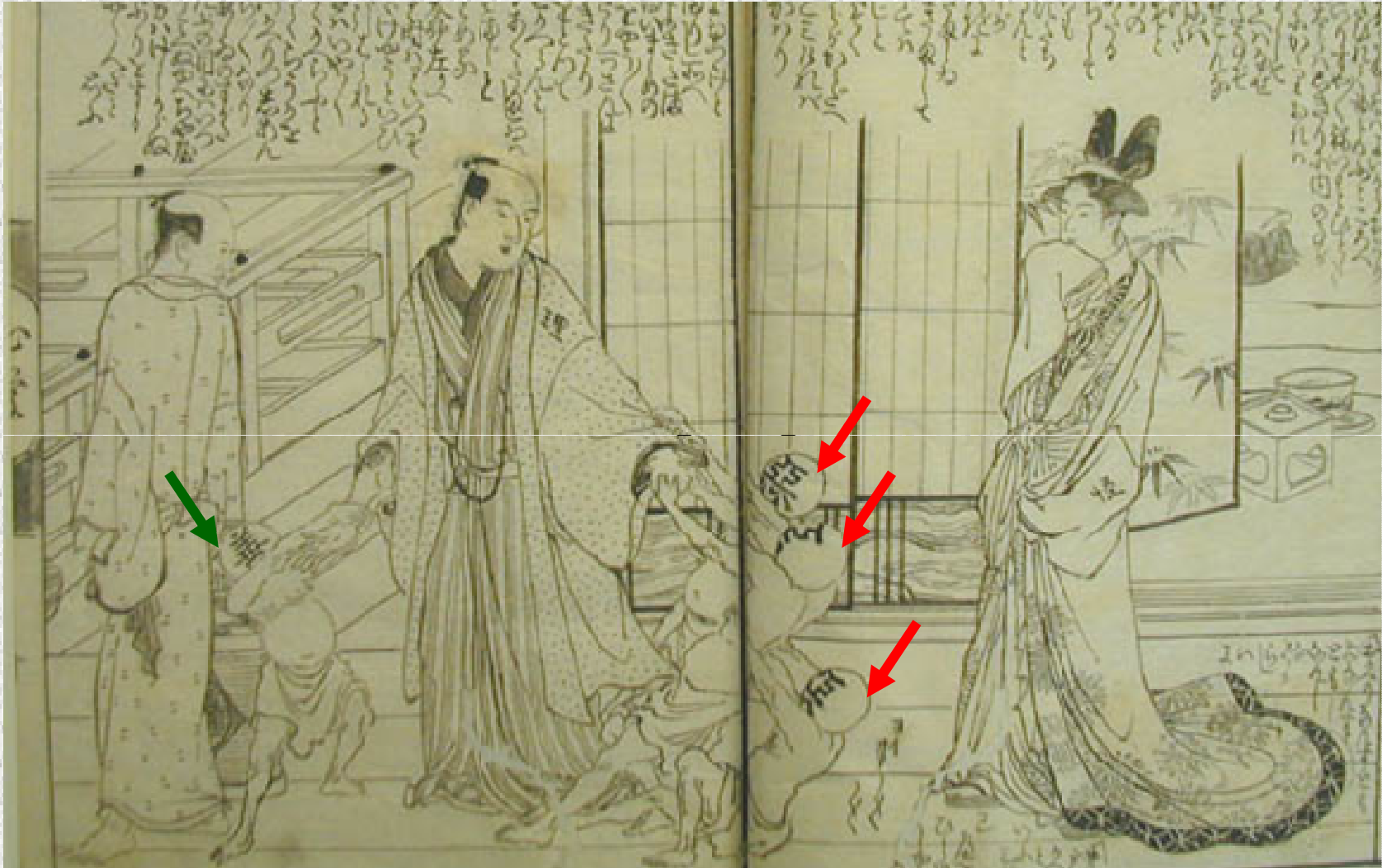
CKD vs CVD :Ibaraki study

CVD deaths are related with proteinuria and low eGFR



*: $P < 0.05$

Life style in “Edo” period



1790 K Santo

Different Clinical outcomes for CVD

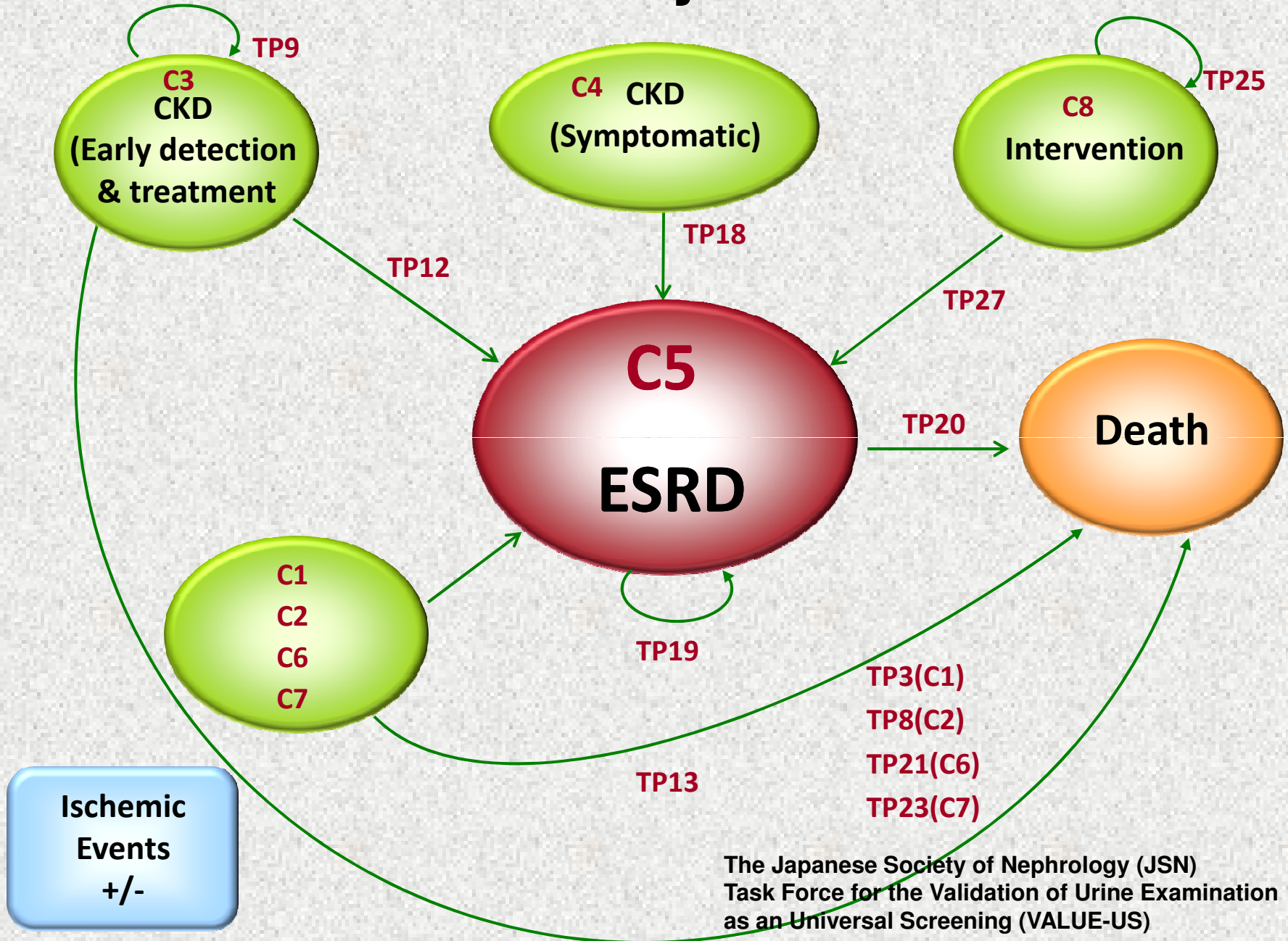
The Gonryo study

	Odds Ratio (95% CI)	CVD	Death
Primary CKD	1.00	10	4
Hypertension	2.87 (1.37-6.02)	20	5
Diabetes Mellitus	11.88 (4.58-30.83)	26	7
Other CKD	3.59 (1.81-7.09)	13	8

N=2,692 CKD patients, 1-yr cohort study
Adjusted for age, gender, Hb, proteinuria, SBP, BMI,
hyperlipidemia, DM, steroid, smoking, history of CVD

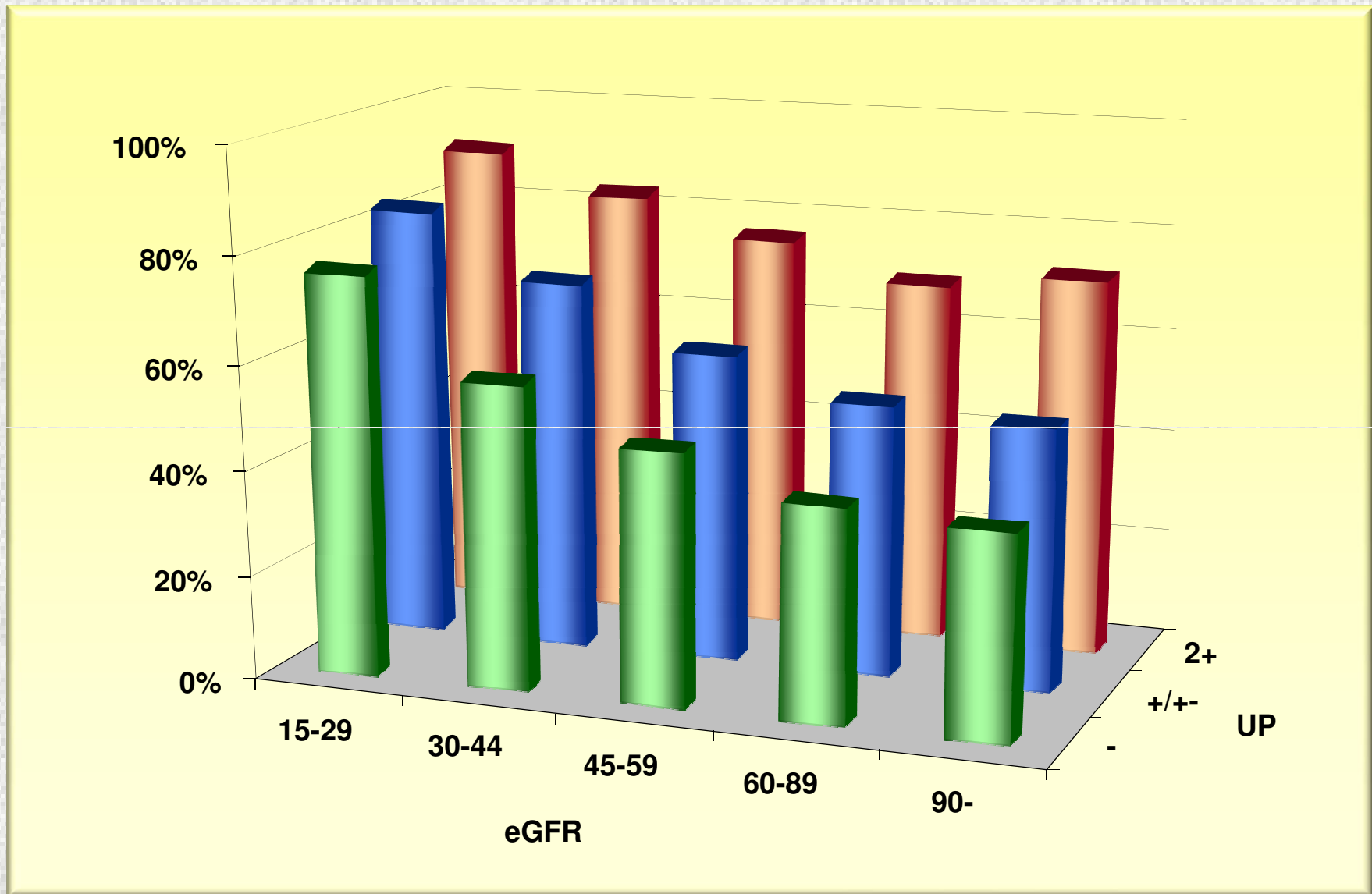
ESRD 113, CVD 69, death 24, lost F/U 200

Natural Course to Dialysis : Markov model



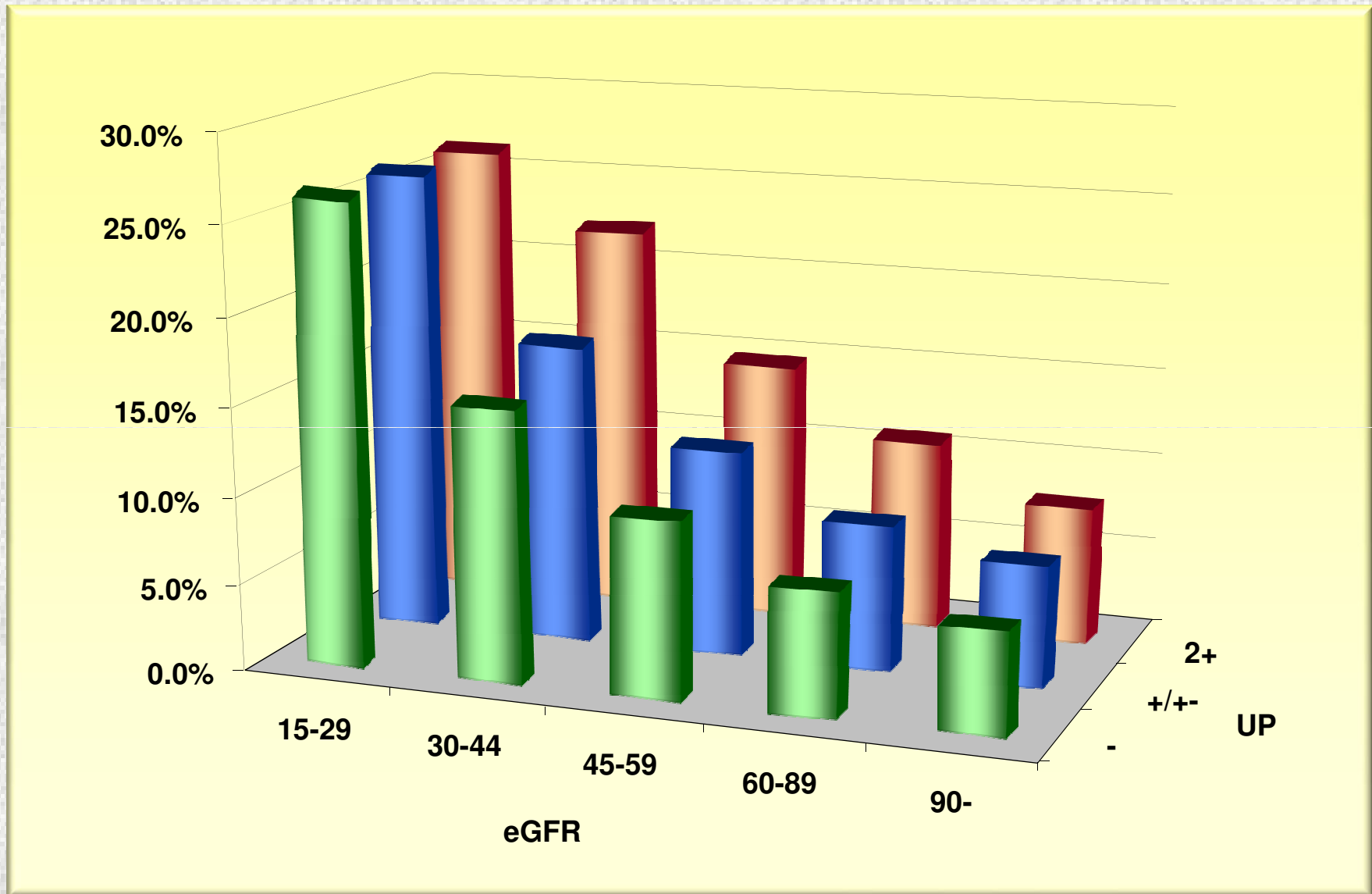
The Japanese Society of Nephrology (JSN)
 Task Force for the Validation of Urine Examination
 as an Universal Screening (VALUE-US)

Prevalence of Hypertension



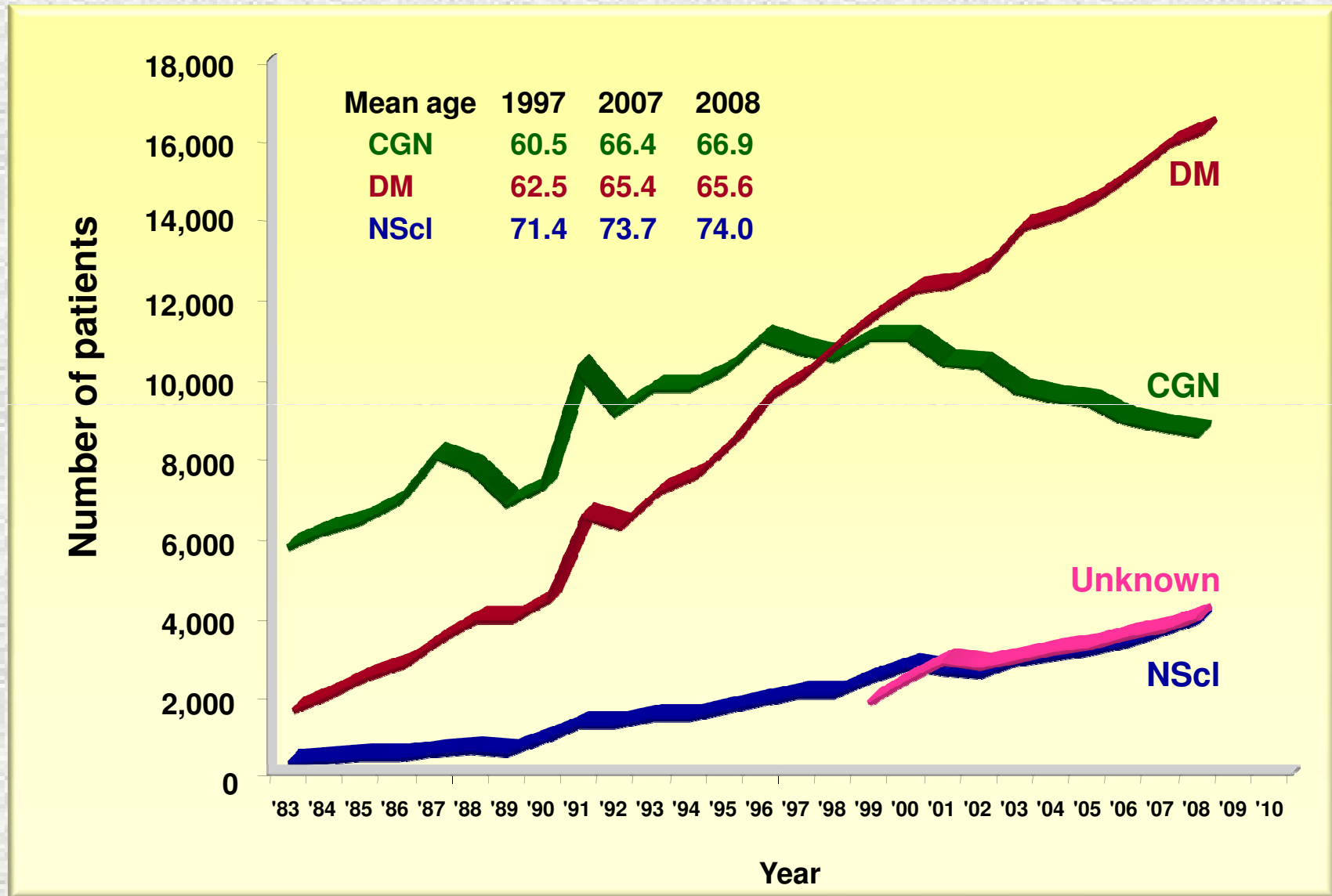
Nationwide Specific Health Check and Guidance System
in Japan, N=332,174

Prevalence of CVD History

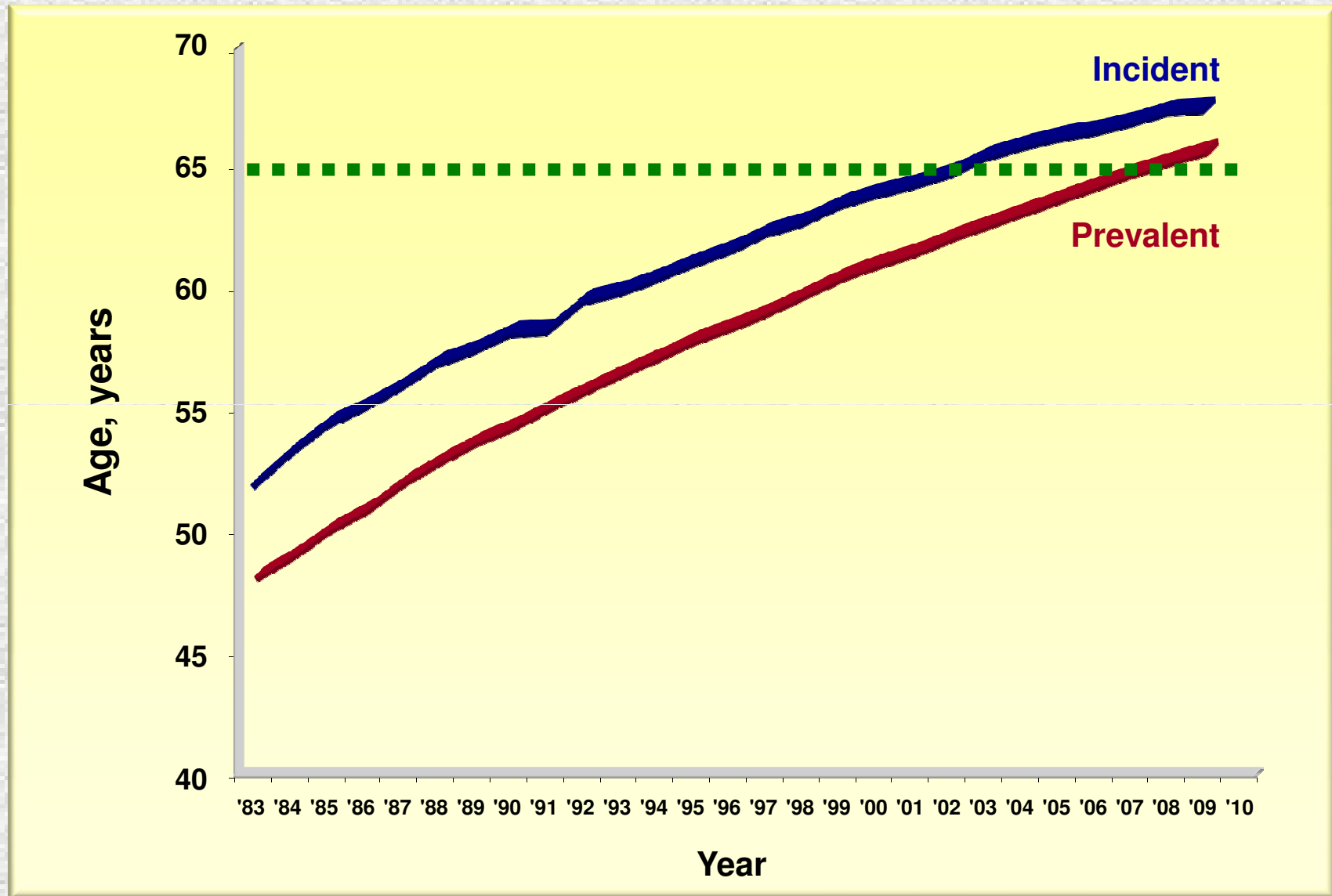


Nationwide Specific Health Check and Guidance System
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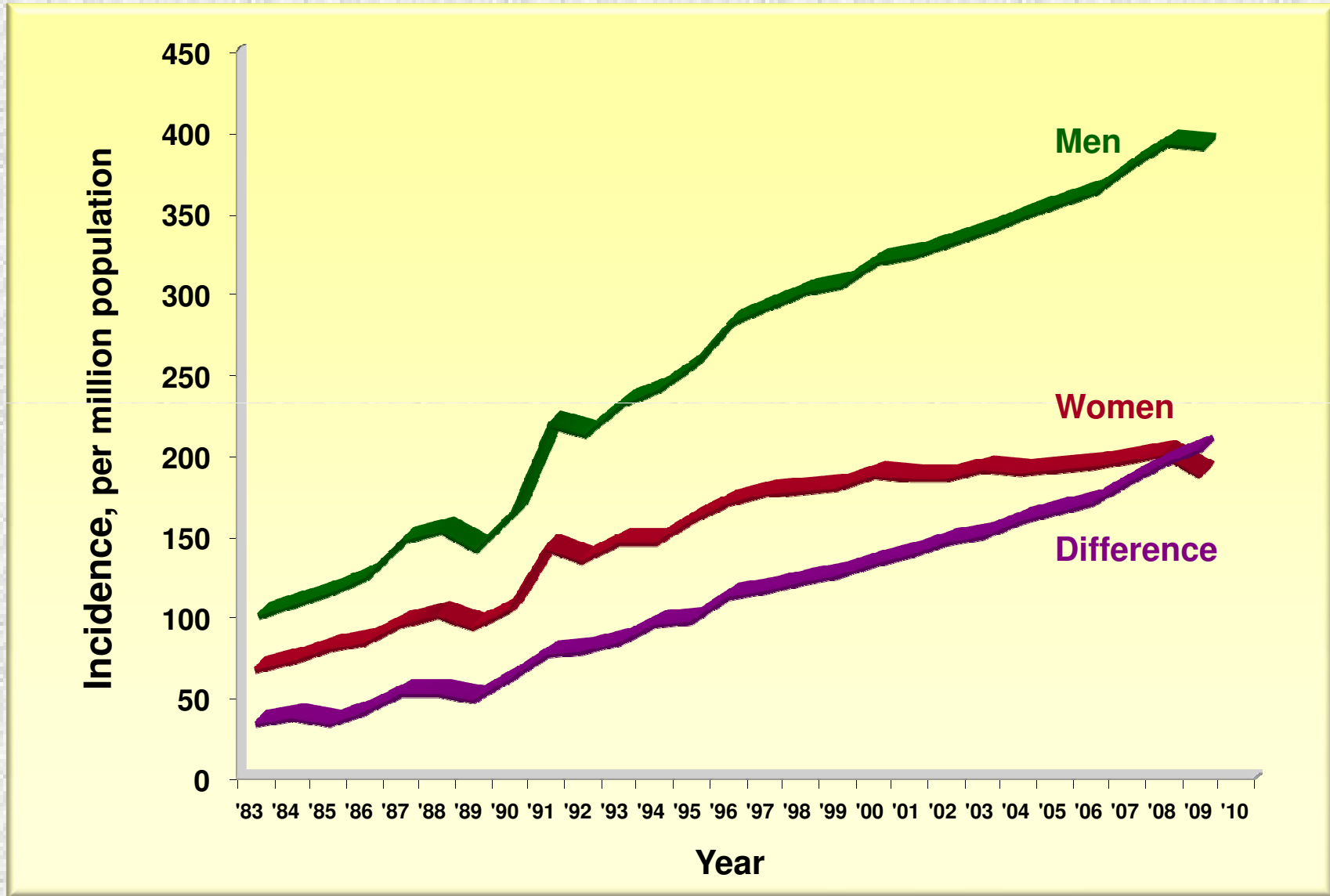
Incidence by renal disease :ESRD



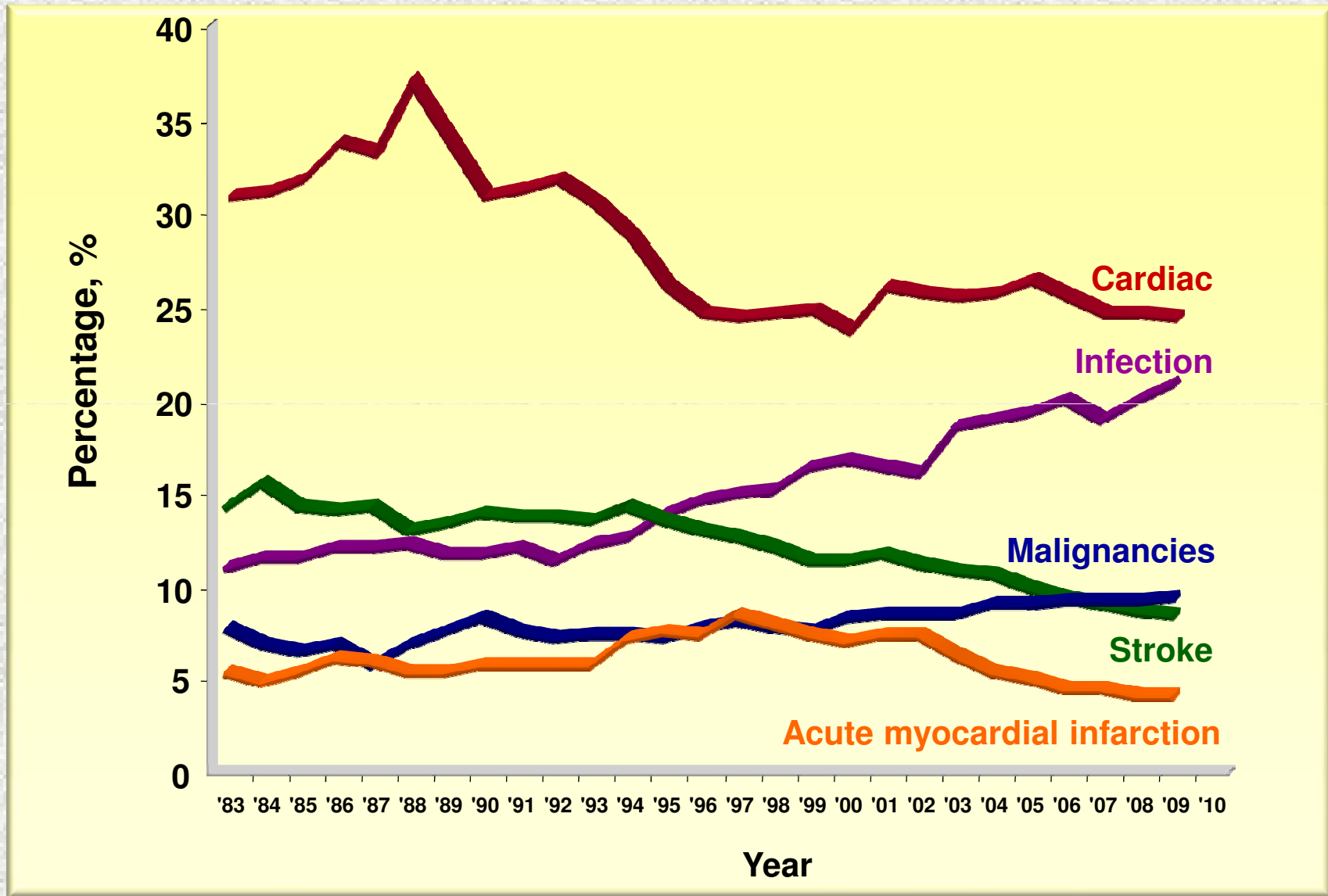
Mean Age of Patients :ESRD



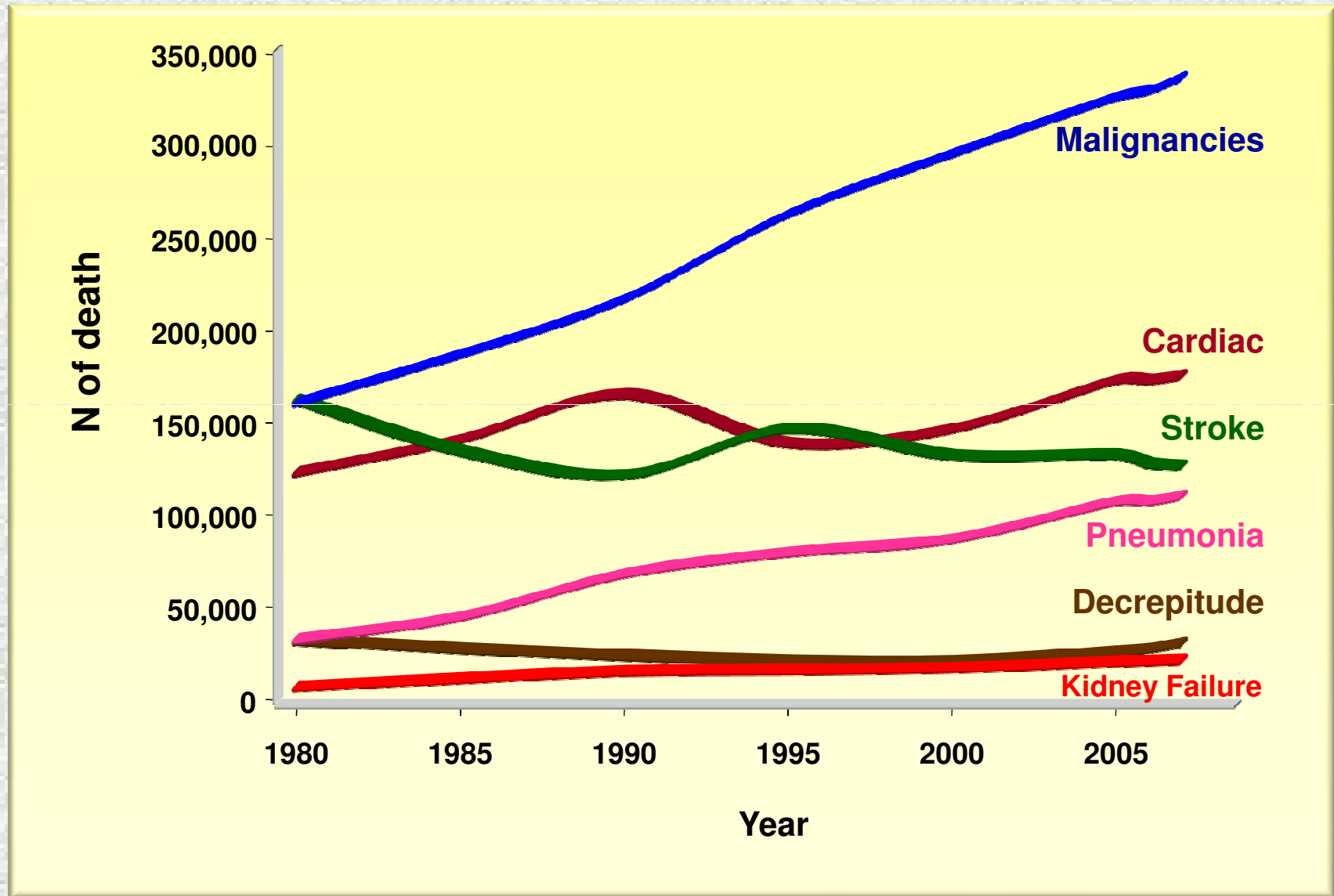
Incidence by gender :ESRD



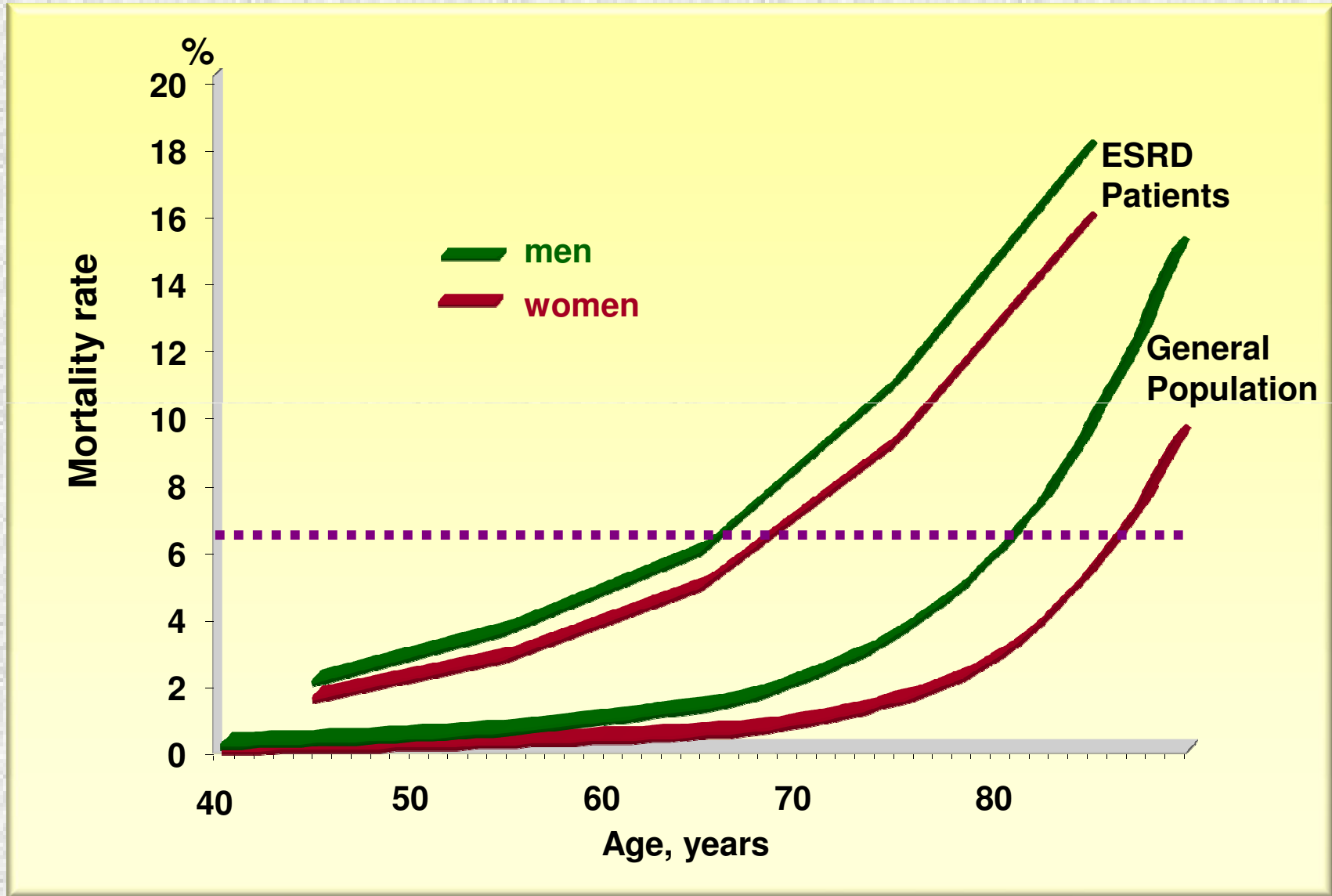
Causes of Death in Prevalent Patients



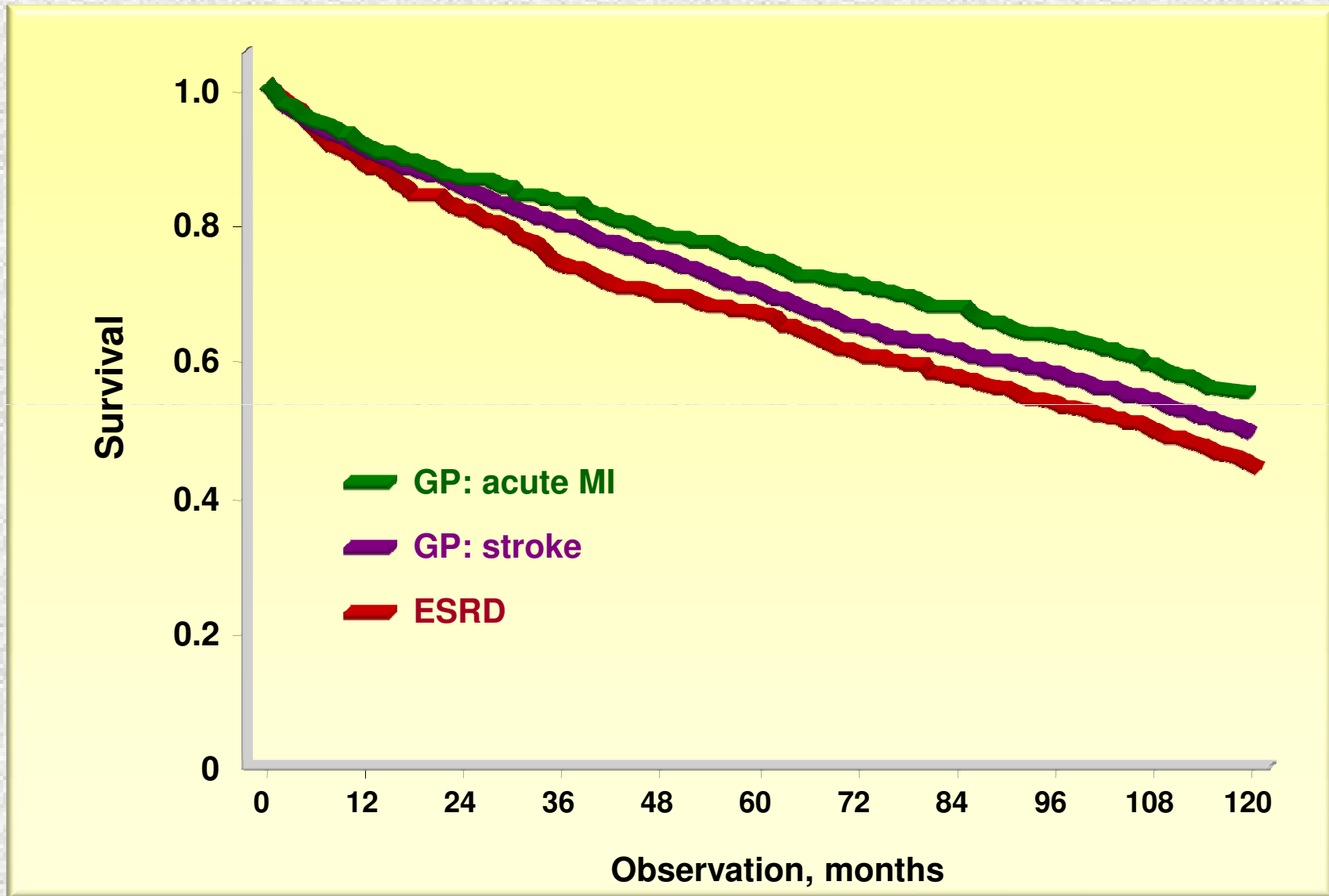
Causes of Death in General Population



Annual Mortality rate



Prognosis: ESRD pts vs.CVD pts



Survival of Dialysis Patients

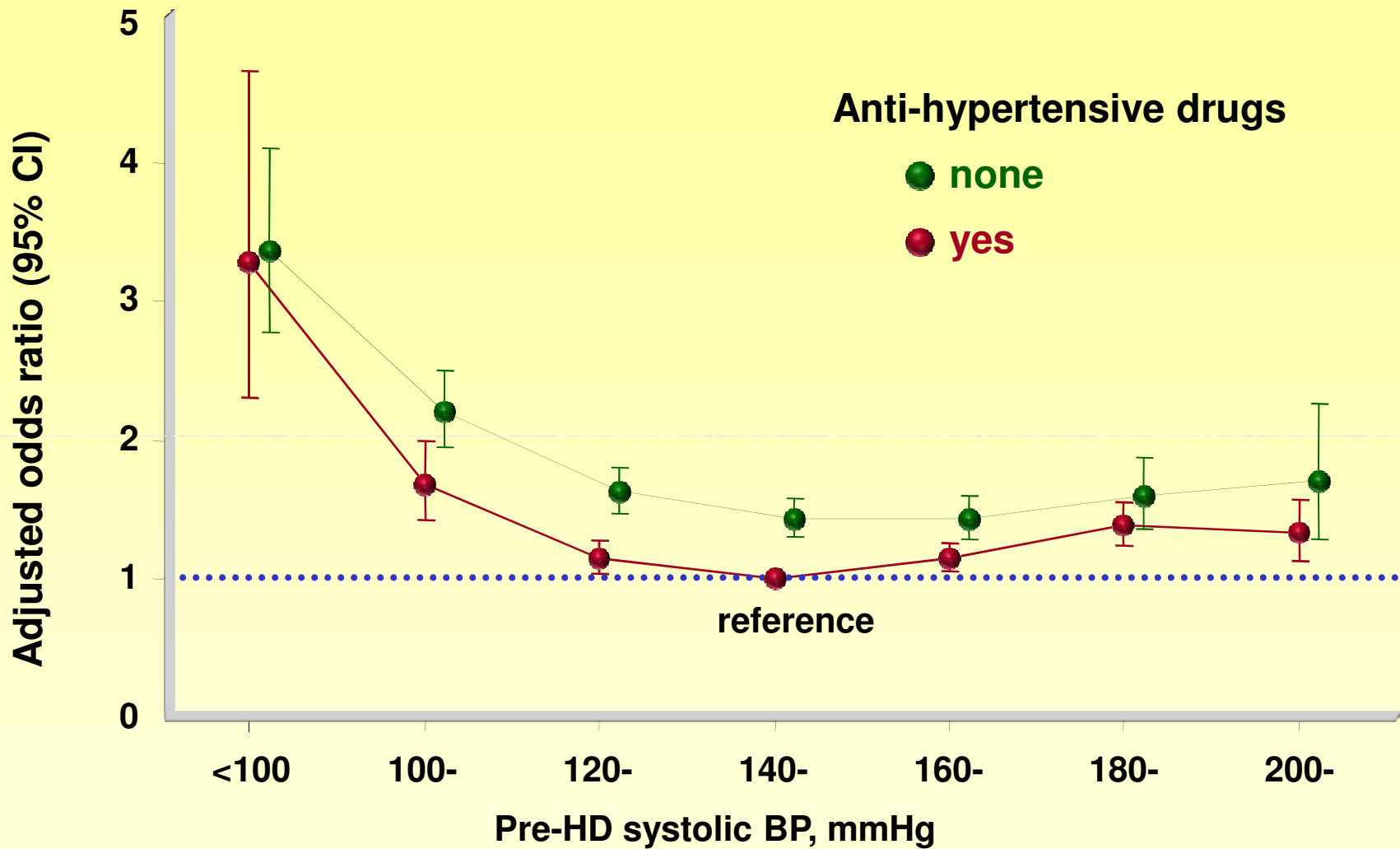
JSDT database

1. Pre-HD blood pressure (N=163,668)
2. Pre-HD pulse rate (N=147,702)

Prevalent patients cohort

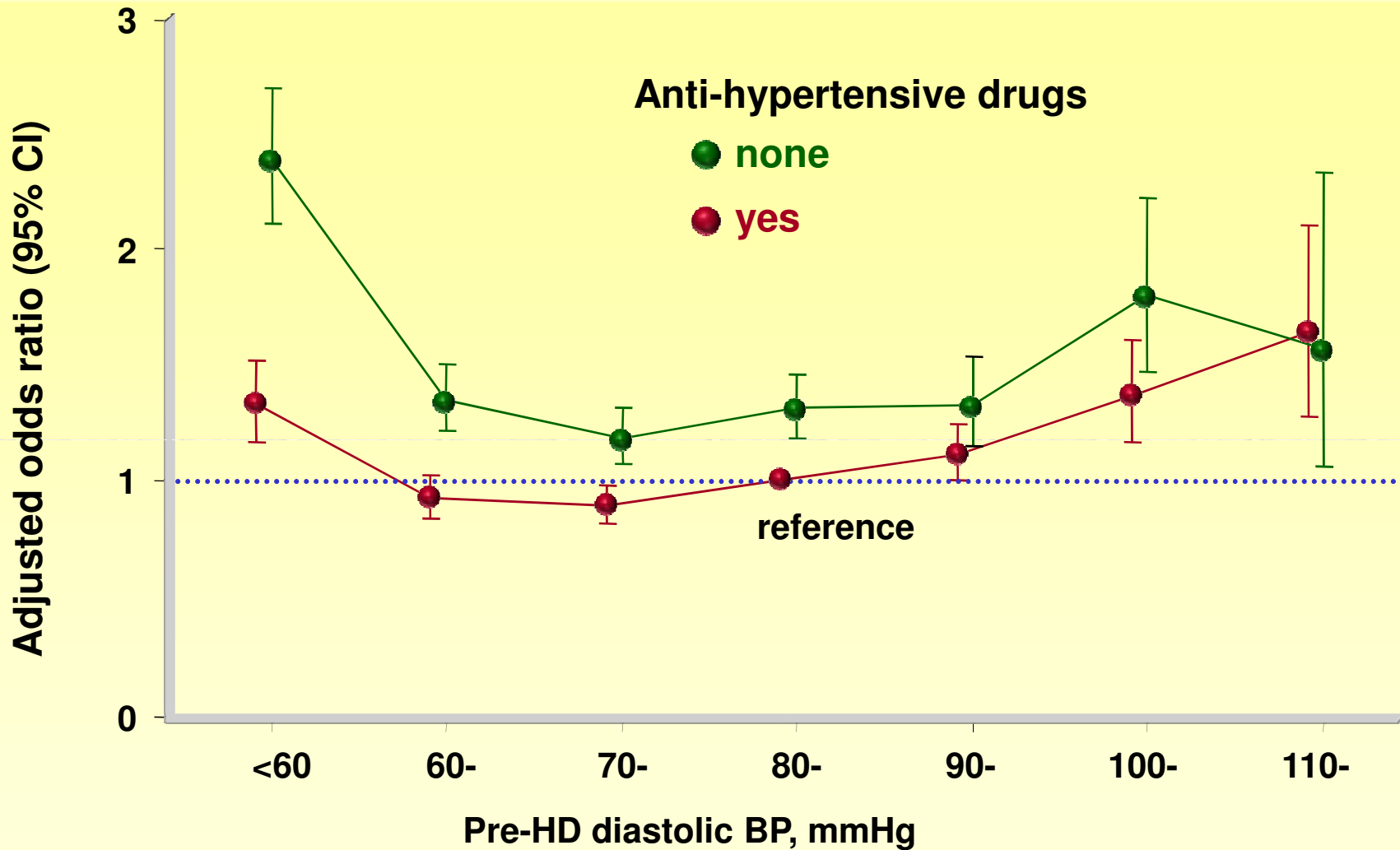
- * Mean Age 63.6 yrs, DM 31.4%, BMI 21.1
- * Mean Vintage 8.0yrs (more than 10,000 pts; >25 yrs)
- * History of CVD
 - AMI 6.1%
 - CH 3.7%
 - CI 11.8%
 - Amputation 2.4%

Pre-HD systolic BP vs. Survival



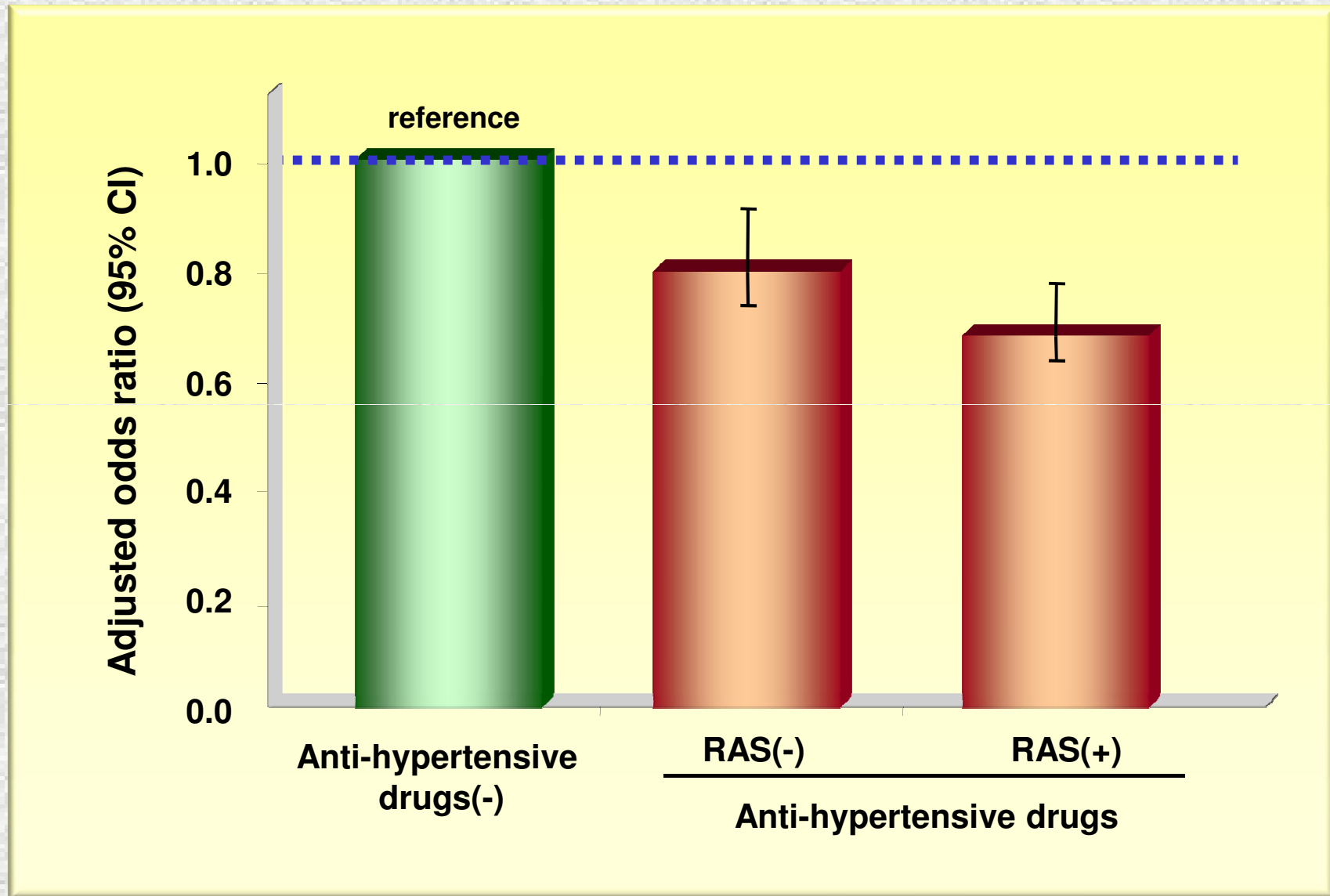
none	1,555	6,242	14,464	17,731	11,304	3,710	986
yes	372	3,309	16,912	35,864	32,476	14,182	4,561

Pre-HD diastolic BP vs. Survival

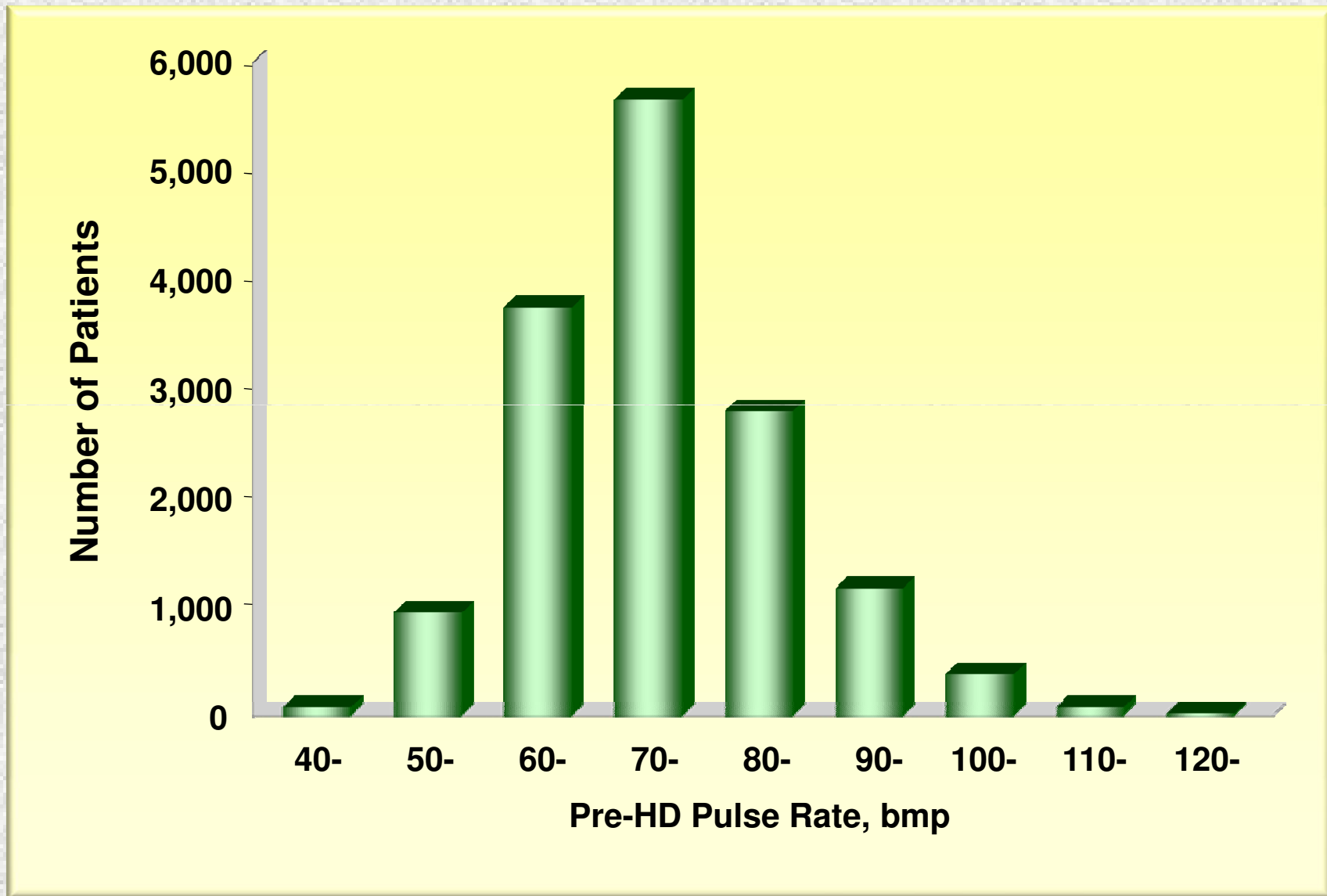


none	4,601	10,515	15,820	14,817	6,996	2,496	747
yes	4,701	15,977	29,186	31,781	17,004	6,683	2,344

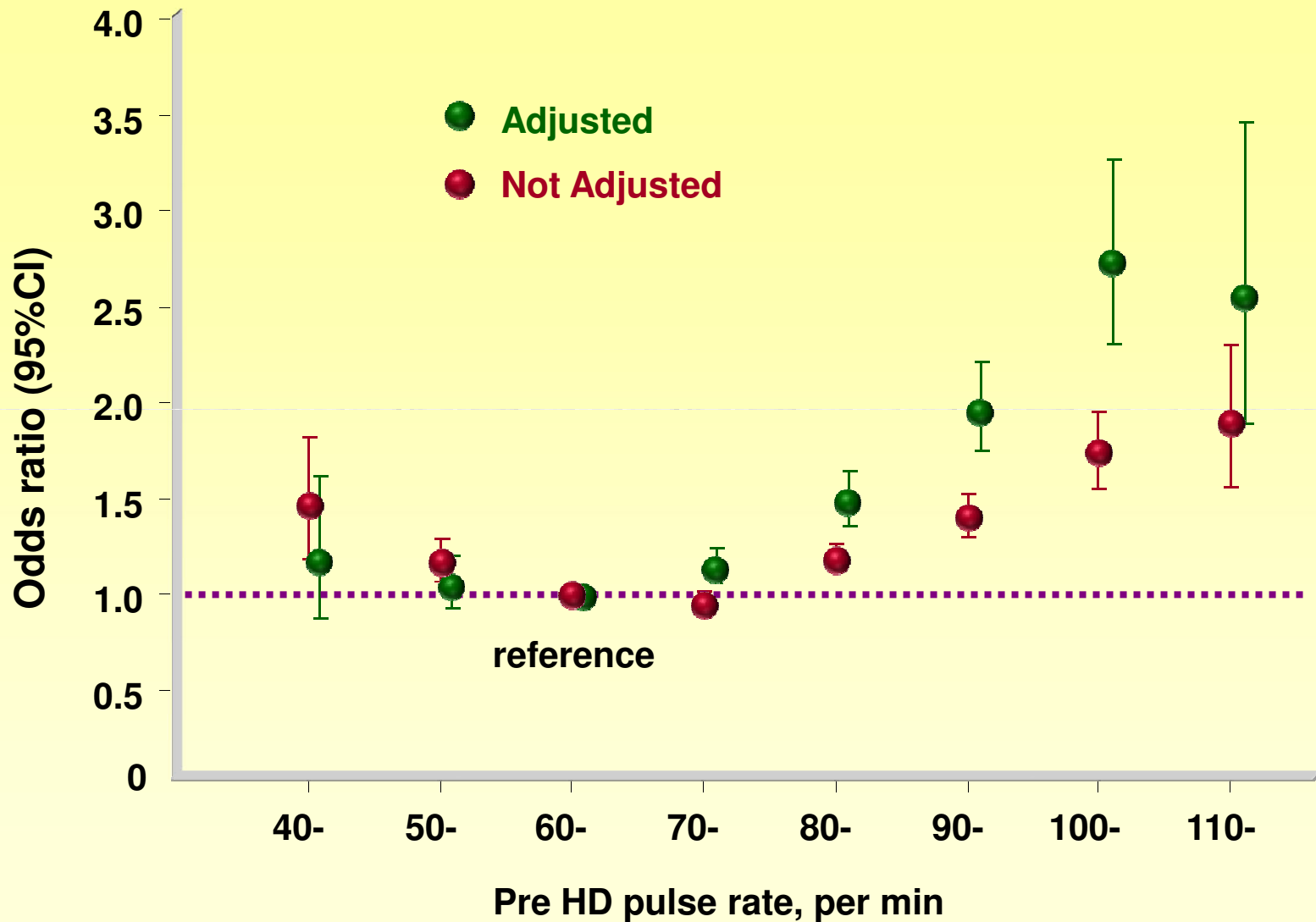
Effects of drug treatment



Distribution of Pulse Rate



Pulse Rate and Survival



Olmesartan **C**linical **T**rial in **O**kinawan
Patients **U**nder **OKIDS**

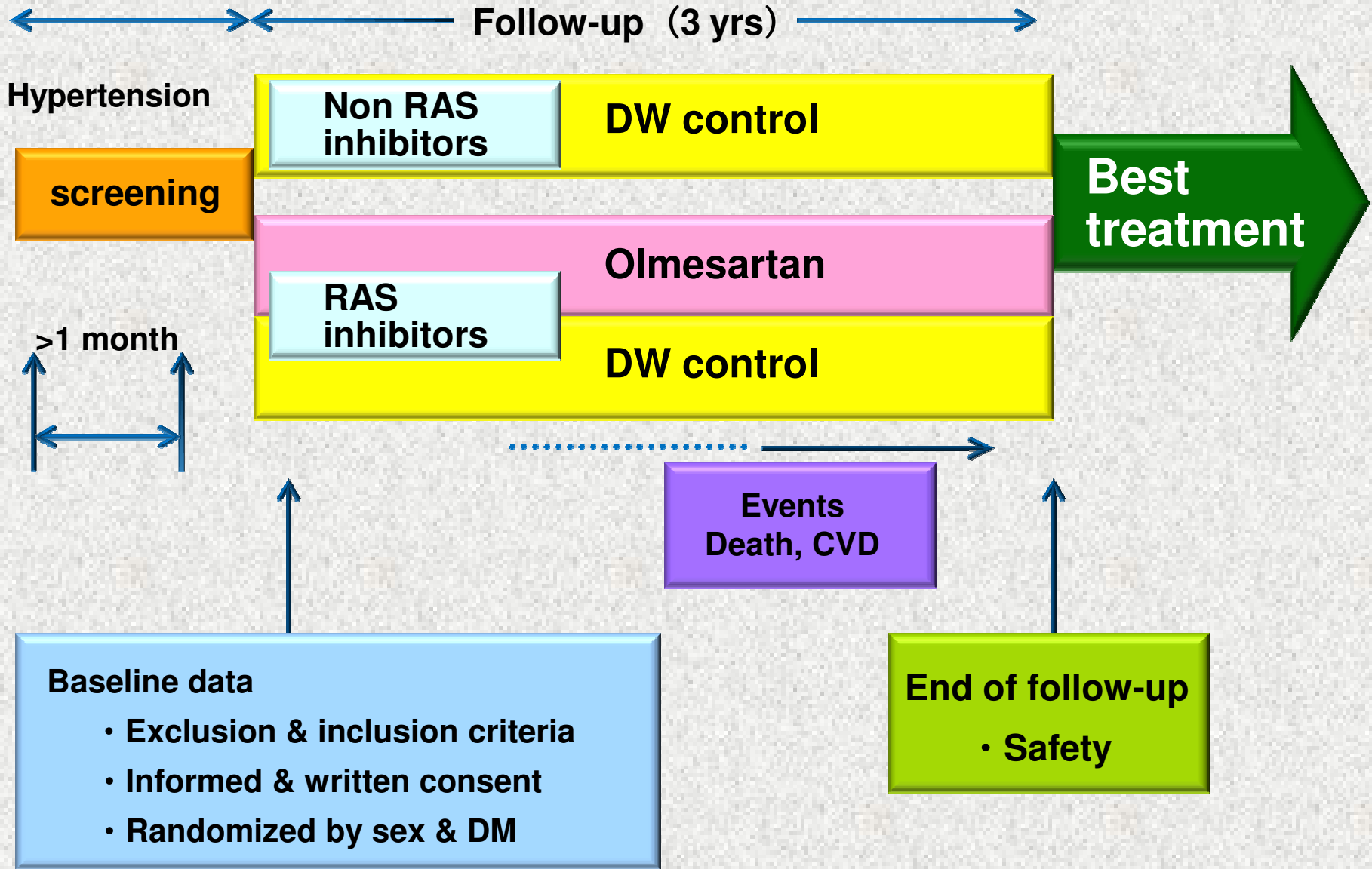
OCTOPUS

Cochran Renal Group

www.cochran-renal.org

CRG010600030

Protocol



Prevalent HD Patients in Okinawa 2005
N=3,529

Preliminary Screening at Contracted Units

N=1,240 **RAS (-) : N=640**
RAS (+) : N=600



Informed Consent
N=533



Excluded

- 1. Not signed (N=49)**
- 2. Against inclusion criteria (N=15)**

Randomization
2006 June to 2008 June
N=469

Target BP
<140/90mmHg at Pre-HD



Follow-up by 2011 June

Blood pressure: Pre-HD vs. Home

	Total N=210	RAS (+) N=107	RAS (-) N=103	<i>P</i> value
Pre-HD				
Systolic BP, mm Hg	158.8 (14.4)	157.5 (15.1)	160.1 (13.5)	NS
Diastolic BP, mm Hg	81.2 (10.7)	81.3 (10.1)	81.2 (11.2)	NS
Pulse rate, bpm	77.4 (9.8)	77.8 (10.3)	77.5 (9.3)	NS
Home				
Systolic BP, mm Hg	150.5 (16.6)#	150.9 (16.1)*	150.0 (17.1)#	NS
Diastolic BP, mm Hg	84.1 (11.3)#	84.6 (10.5)*	84.0 (12.0)*	NS
Pulse rate, bpm	74.9 (10.6)*	75.7 (11.6)	73.8 (9.3)*	NS

#*P*<0.0001, **P*<0.005



WG 2, Pan Asian CKD Registry

Co-chairs: Kunitoshi Iseki, Vivekanand Jha

Members : Evan Lee, Jafar H Tazeen,

Lynn A Gomez, Randal Faull,

Zaki Morad, T Criang, Chin Ho Jun,

Toshiaki Monkawa, Vlado Perkovic



Aim of the Pan Asian Registry

To provide concrete data of CKD registry on prevalence, incidence based on the sources, collecting method (proteinuria, Albuminuria, eGFR)

- regional difference**
- set-up outcome variables**
- find unique problems in Asian countries**



Questions addressed with the registry

- **What are the key outcomes of CKD?**

Risk of CVD and mortality with CKD;

may be different among Asians

Prevalence of IgA GN;

vary by ethnic background and geographical area

Rapid increase in ESRD in China

- **Total number on maintenance dialysis:**

41,755 (1999)

65,074 (2007)

120,000 (2009, not complete yet)

- **Prevalence of ESRD, *per million population***

33.2 (1999)

51.7 (2008)

92.3 (2009, 1.3 billion)

Within 5 years, N of ESRD becomes larger than JSdT!

Summary of the presentation

CKD and CVD: Asians vs. non-Asian countries

Similarities

- Increasing prevalence of CKD & ESRD
- CKD as a risk factor of CVD

Dissimilarity

Effect of gender, obesity, and underlying kidney disease

- More ESRD than CVD
- Better survival of ESRD patients in Japan