אוניברסיטת תל-אביב
Tel-Aviv University

מרכז רפואי רבין
בילינסון · השרון

AtrioVentricular Block in Contemporary Patients with Acute Myocardial Infarction. Data from the Acute Coronary Syndrome in Israel (ACSIS) survey

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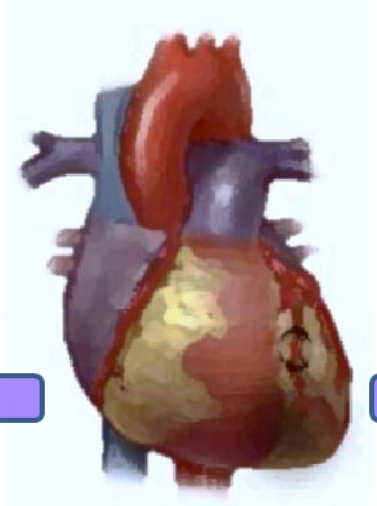
Conflict of interest

- Non

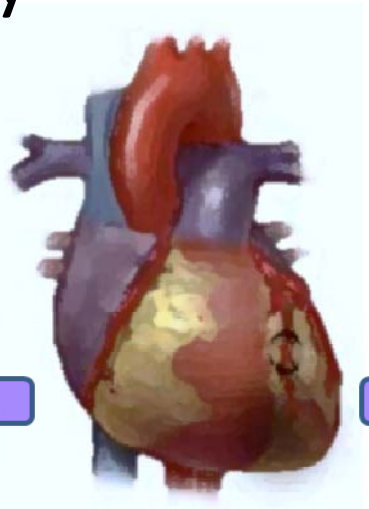


Background

- Previous reports are mostly from the thrombolytic and pre thrombolytic era.
- Primary percutaneous intervention (Ppci) and HDAVB in AMI patient.
- The change in AMI population and HDAVB Incidence.
- Predictors for HDAVB.

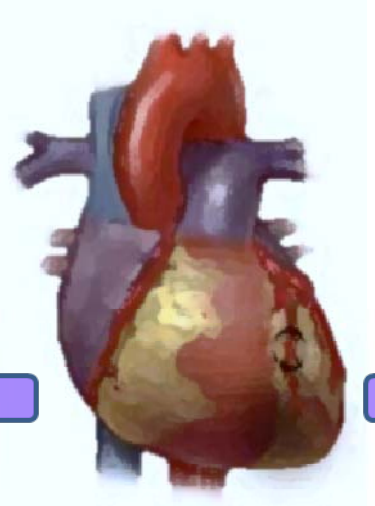
Aim

- The aim of the study is to assess the changes over the last decade of the incidence and prognosis of AVB, in AMI patient, both STEMI and NSTEMI.
- To demonstrate the influence of PPCI treatment on HDAVB in contemporary population in the last decade.



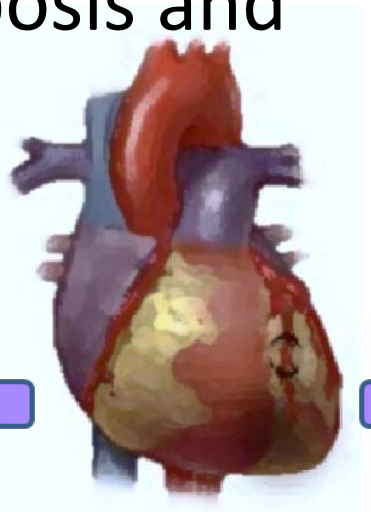
Methods

- Patient from the acute coronary syndrome Israeli survey (ACSIS) 2000-2010.
- AMI patient (n=11,487) divided to HDAVB (n=308)and NHDAVB (n= 11,150) patient.
- Data collected.



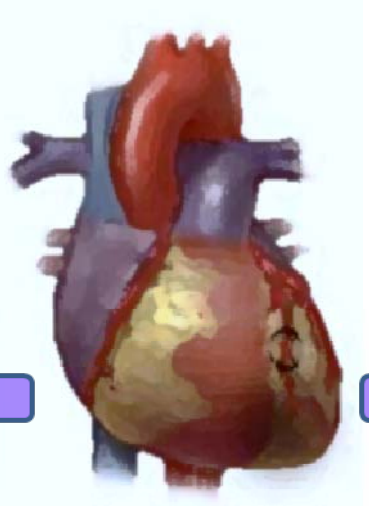
Methods

- Outcome
  - In-hospital mortality.
  - 30 days mortality
  - 1 year mortality
- MACE - composite measure of all-cause mortality, recurrent-MI, stent thrombosis and urgent hospitalization
  or revascularization

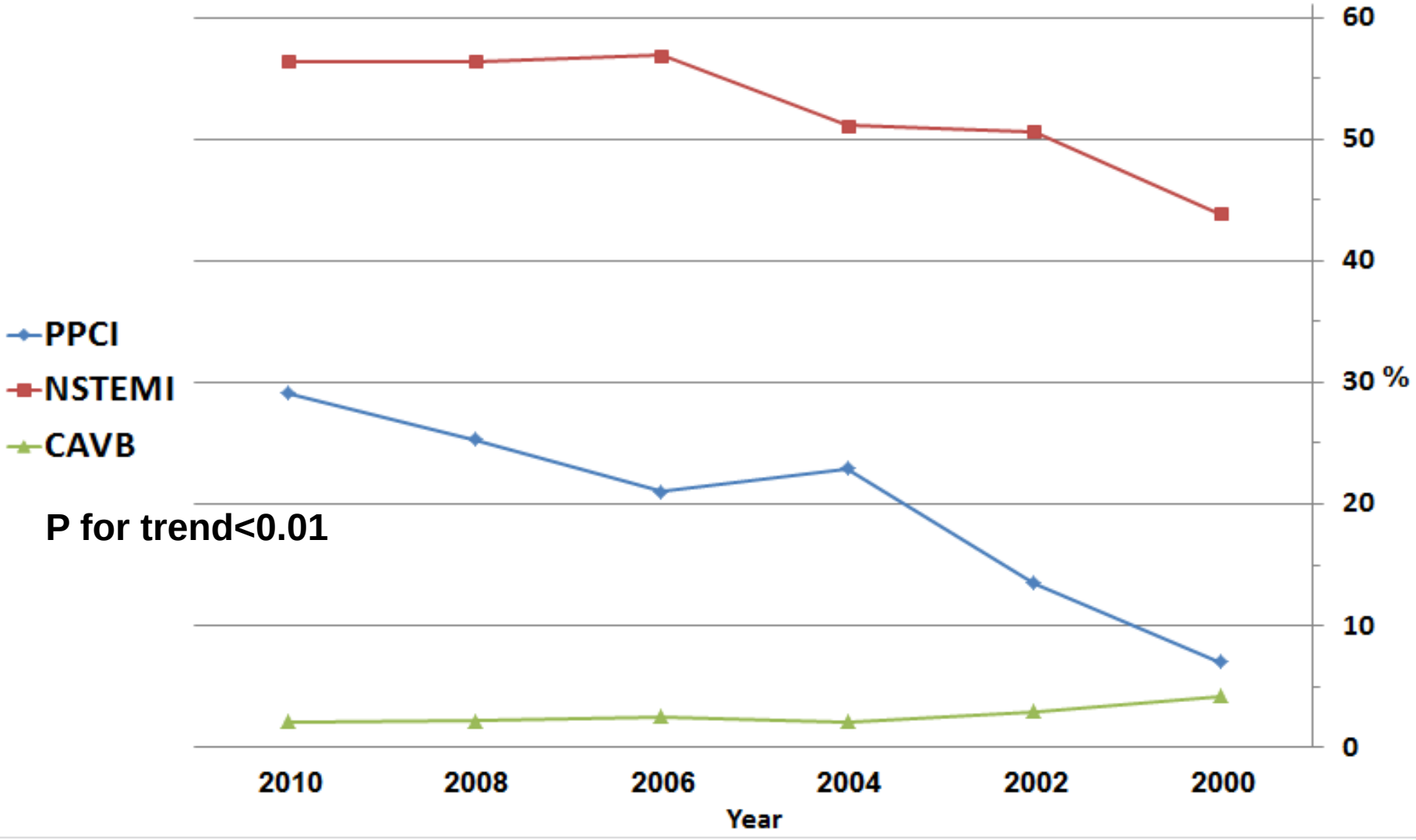


Results

YEAR	HDAVB	AMI PATIENT	P for trend
2000	74(4.22)	1753	
2002	61(2.98)	2048	
2004	44(2.1)	2094	
2006	52(2.5)	2065	
2008	39(2.2)	1746	
2010	38(2.1)	1781	
	308(2.68)	11487	**0.0002**



Changes in HDAVB, NSTEMI, PPCI incidence



CHARACTERISTICS	NHDAVB (11150) %	HDAVB (308) %	P
Sex female	23.2	32.1	<0.01
Age mean(SD)	63.6(13.1)	68.4(12.7)	<0.01
Prior MI	29.5	27	0.34
Prior AP	37.3	28.3	<0.01
Prior PCI	25.7	19.2	<0.01
Prior CABG	10.3	7.5	0.11
CHF	8	9.4	0.34
Prior CVA/TIA	7.9	11.8	0.01
CRF	10.4	13.4	0.09
PVD	8.8	10.7	0.24
Hypertension	56.6	55.4	0.67
Diabetes	33.9	37.7	0.16
Dyslipidemia	61.8	49.5	<0.01
Current smoker	36.2	36.8	0.82
Family history of CAD	23.8	12.8	<0.01
STE	46.6	80.5	<0.01
NSTEMI	49.8	15.9	<0.01
KILLIP =>2	17.1	33.1	<0.01
primary PCI	63.1	64.8	0.65
primary reperfusion STEMI	61.7	65.3	0.24

CHRONIC TREATMENT			
BB	3395 (36)	71 (31)	0.12
CCB	1919 (20.4	44 (19.1)	0.64
ACEI\ARB	3420 (36.1)	79 (33.9)	0.49
ASPIRIN	4464 (47.3)	110 (47.6	0.91
CLOPIDOGREL	712 (7.5)	9 (3.9)	0.03
STATINS	3910 (41.5)	81 (35.1)	0.05
AMIODARONE	22 (0.60)	1 (1.2)	0.49
BLOOD TEST			
CK median	307 (120-1020)	903 (341-2089)	<0.0001
Troponin I median	3.9 (0-17)	17.7 (0-50)	<0.0001
Troponin T median	0.5 (0-2)	2 (0-4.6)	<0.0001
Creatinine median	1 (0.9-1.3)	1.2 (1-1.6)	<0.0001
GFR median	74.4 (57-90)	59.8 (41.4-79.2)	<0.0001

Angiography

	NHDAVB (883) (%)	HDAVB (44) (%)	P VALUE
TIMI before vasc =<2	755 (85.5)	41 (92.3)	0.066
TIMI after vasc =<2	123 (9.8)	17 (26.1)	<0.001
INFARCT REALATED ARTERY	**NHDAVB (1646) (%)**	**HDAVB (81) (%)**	**P VALUE**
LMCA	13 (0.79)	0 (0)	0.0001
LAD	874 (53.1)	18 (22.22)	
LCX	211 (12.82)	4 (4.94)	
RCA	530 (32.2)	56 (69.14)	
SVG	14 (0.85)	2 (2.47)	

HDAVB predictors

PARAMETER	95% CI	ODDS RATIO	P VALUE
Age	1.022 - 1.044	1.033	<0.01
Female	0.952 - 1.635	1.248	0.10
Prior AP	0.620 - 1.062	0.812	0.12
Diabetes	0.948 - 1.565	1.218	0.12
HTN	0.687 - 1.142	0.886	0.34
Prior MI	0.735 - 1.422	1.023	0.89
Admission KILLIP =>2	1.524 - 2.606	1.993	<0.01
STEMI on Admission	9.714 - 6.820	5.033	<0.01
Prior CABG	0.722 - 1.874	1.163	0.53
Prior CHF	0.655 - 1.605	1.026	0.91
Current smoker	1.043 - 1.822	1.379	0.02
Prior PCI	0.658 - 1.351	0.943	0.74

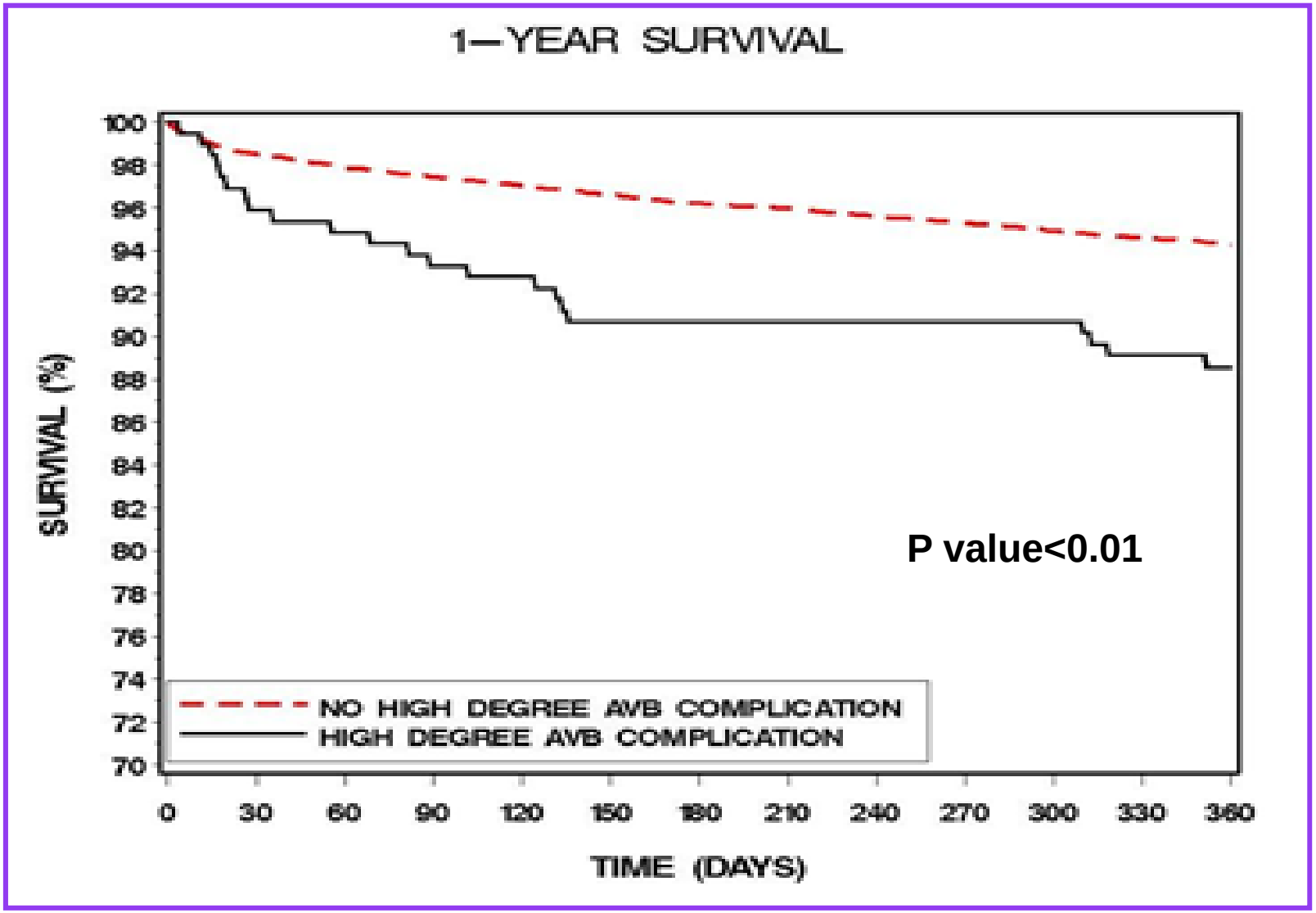
In hospital complications

COMPLICATION	NHDAVB (11150) %	HDAVB (308) %	P VALUE
RE-MI	1.6	3	0.06
Post MI angina	6.1	10.8	<0.01
Pulmonary edema	7.7	17.7	<0.01
Cardiogenic shock	3.2	24	<0.01
Free wall rapture	0.4	1.6	0.03
Tamponade	0.3	1.6	<0.01
New RBBB	2.4	8.1	<0.01
New LBBB	1.2	3.9	<0.01
Sustained VT	1.5	4.9	<0.01
Primary VF	1.9	9.4	<0.01
Secondary VF	0.8	3.6	<0.01
Asystoly	1.9	17.9	<0.01
Acute renal failure	6.2	20.6	<0.01
Major bleeding	1.2	2.3	0.09
AF	5.1	13	<0.01
CVA/TIA in hospital	0.8	2.9	<0.01
IABP	4.1	17.9	<0.01
Resuscitation in hospital	3.2	24.7	<0.01
Three vessel CAD	31.6	40.7	<0.01
EF<30%	9.1	18.07	<0.01

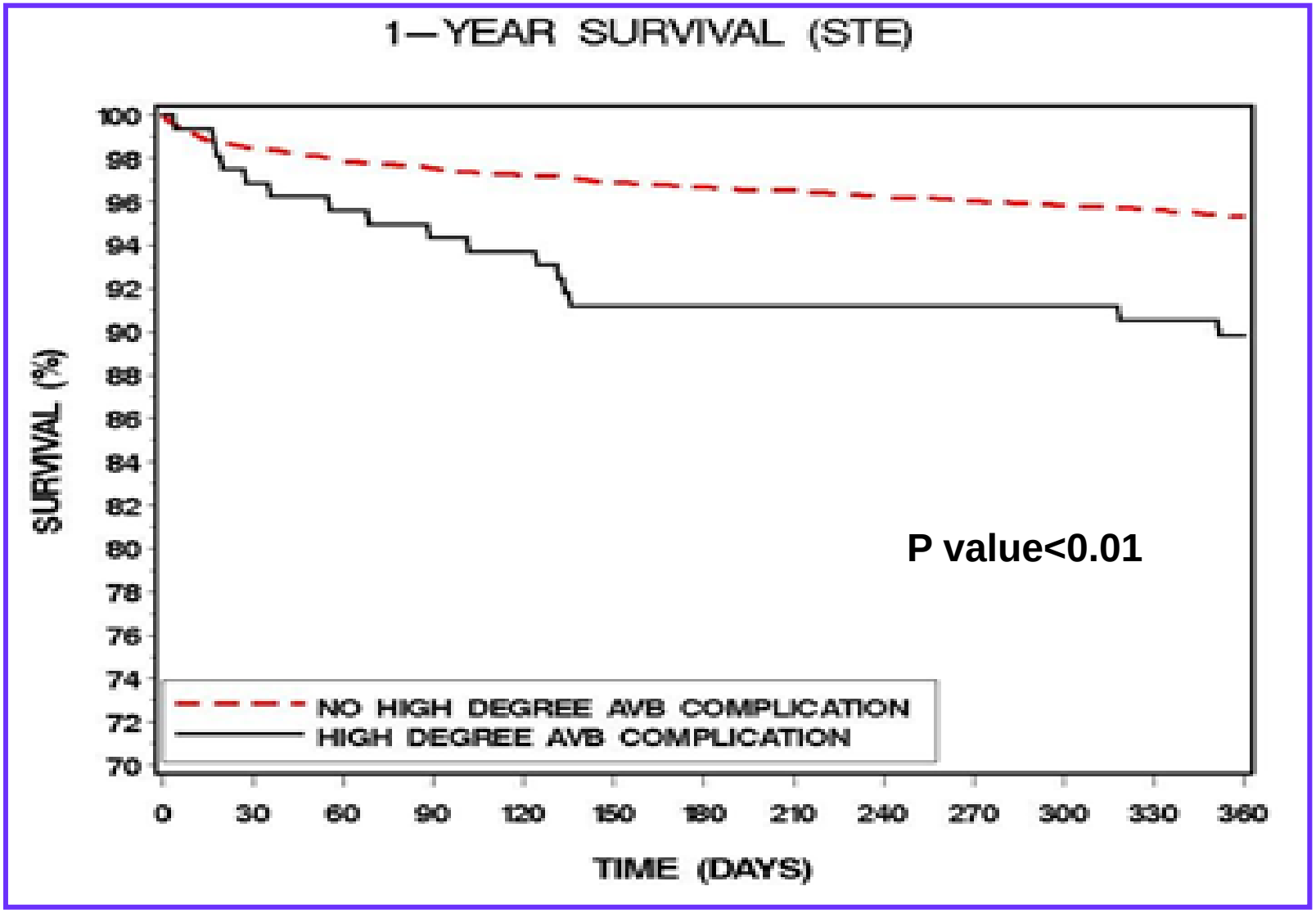
Mortality predictors (1 year)

	95% CI	Hazard ratio	P value
HDAVB	1.311 - 3.162	2.028	<0.01
Age	1.054 - 1.065	1.06	<0.01
Sex	0.856 - 1.105	0.973	0.67
Prior AP	0.794 - 1.015	0.898	0.08
DM	1.175 - 1.492	1.324	<0.01
HTN	0.842 - 1.093	0.959	0.53
Prior MI	1.051 - 1.343	1.188	<0.01
KILLIP >=2	3.215 - 4.111	3.635	<0.01

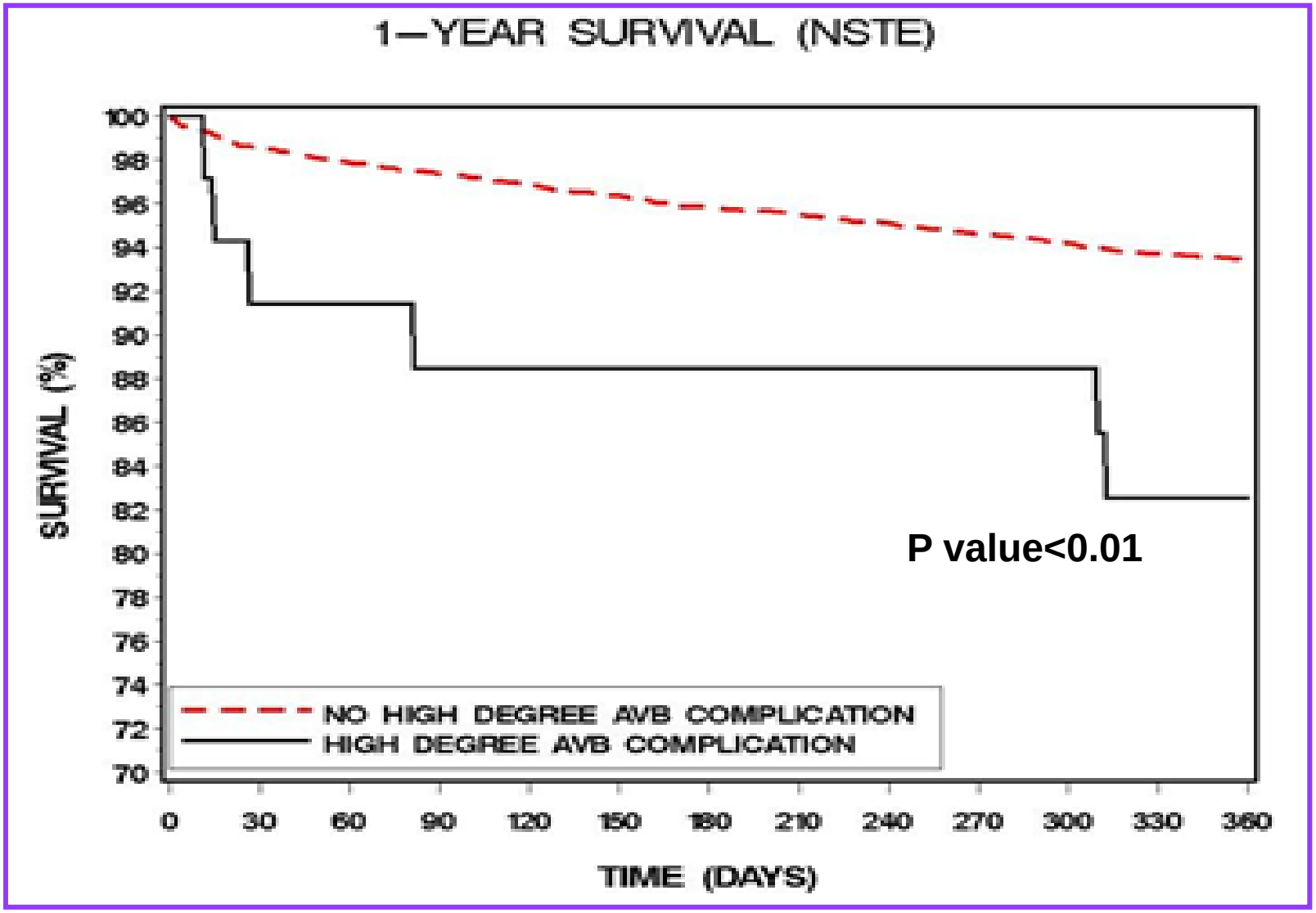
Kaplan Meier survival



Kaplan Meier survival



Kaplan Meier survival

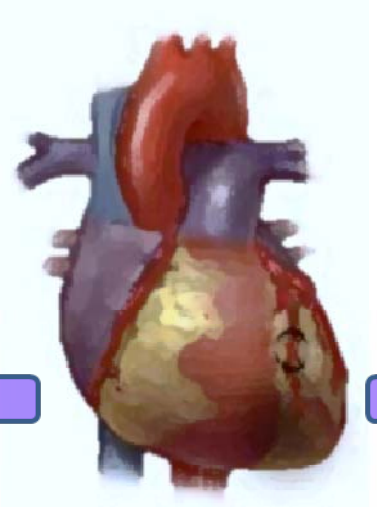


Limitations

- Transient and permanent HDAVB.
- Time when AVB occurred.
- Pacemaker treatment.
- Short follow-up time.
- Limited data on culprit artery.

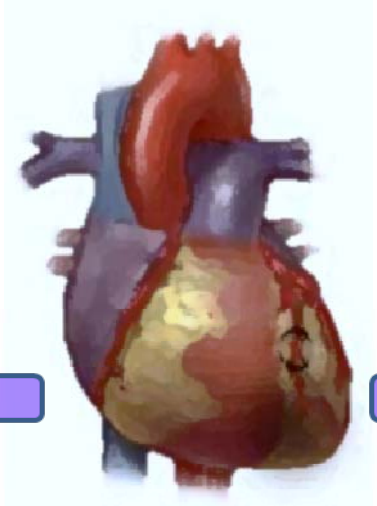
Discussion

- Largest study of HDAVB complicating AMI patient in the Ppci era.
- Decrease of 50% in the incidence of HDAVB in AMI patient.
- Naïve patient.



Discussion

- HDAVB predictors.
- TIMI flow
- HDAVB as a mortality predictor



Conclusion

In the PPCI era although the incidence of HDAVB in AMI patient significantly declined, patients with HDAVB and AMI are much more prone for serious in hospital complications and HDAVB after AMI remained a strong 30 days mortality predictor but also a strong predictor for late all cause mortality.