

# “FAST TRACK” TO TREATMENT

## PTCA IN ACUTE MI

**Do not waste precious time!**

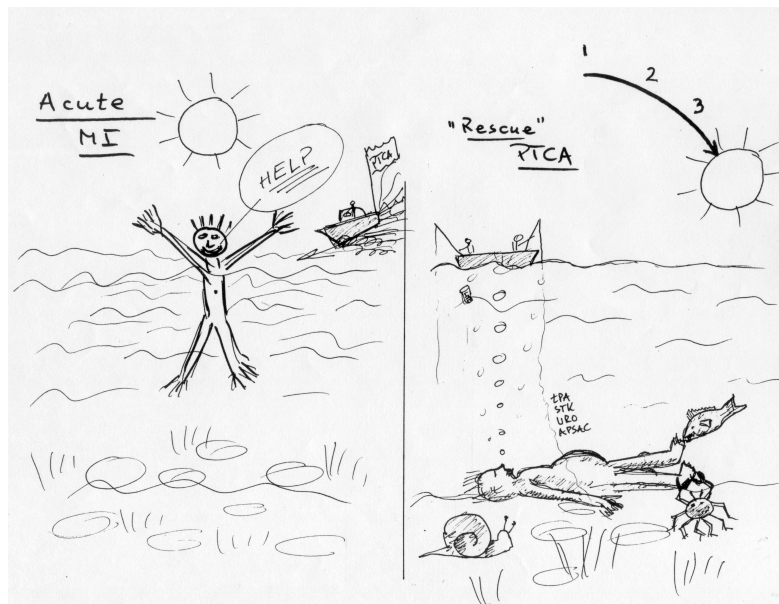
**Waldemar J. Wajszczuk, MD, Sinai Hospital of Detroit**

Assoc. Chief, Section of Cardiovascular Diseases

Director, Cardiac Catheterization Laboratory and Interventional Treatment Center

---

---



Associate Professor of Medicine  
Wayne State University  
Detroit, Michigan, U.S.A.

Private Address:  
4489 Patrick Road  
West Bloomfield, MI 48322, U.S.A.  
tel - (248) 851-1776  
tel/FAX - (248) 855-3714

**Waldemar J. Wajszczuk, MD**  
Interventional Cardiologist

Fellow, American College of Cardiology  
Fellow, American College of Chest Physicians  
Fellow, Council on Clinical Cardiology  
American Heart Association

---

# Modern Treatment of acute MI (Sinai Hospital of Detroit, 1971 – 1997) Waldemar J. Wajszczuk, M.D

## Selected lectures, protocols and publications

1. current treatment methods (10/1988)
2. mechanisms of coronary occlusion
3. interventional approach and “opportunity window”
  - a/ coronary angioplasty
  - b/ coronary thrombolysis
4. primary interventions (delays)
  - a/ delayed arrival
  - b/ immediate, in-hospital
5. “rescue” angioplasty
6. advantages of “open artery”
7. IABP + PTCA in cardiogenic shock
8. “Fast Track” for interventions (1993-94)
  - a/ local (“accelerated”) treatment protocols
  - b/ “fast track” at Sinai Hospital
  - c/ proposals for regional treatment center

---

---

## 9. PTCA in acute MI (WJW experience) at Sinai Hospital

---

---

10. PTCA - abstracts and manuscripts – see separate page below

11. WJW – training in special procedures

# 1984

(01) - MI  
(WJW-10/1984)

## MODERN TREATMENT OF ACUTE MI 10/1984

- A. Conservative - small infarct
    - (medical) - delayed treatment
    - (inferior infarct?)
    - age?, other illnesses?
  
  - B. Aggressive - thrombolysis (STK, tPA etc)
    - (interventional) - coronary angioplasty (PTCA)
    - bypass surgery (CABG)
- =====

(02) - MI (WJW-10/1984)

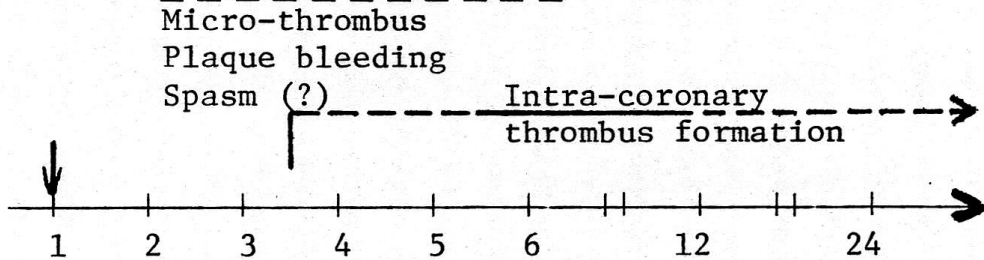
## PATHOGENESIS OF ACUTE MYOCARDIAL INFARCTION

### Coronary pathology in acute MI

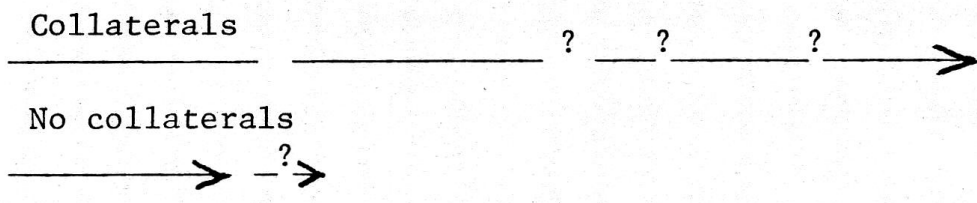
- I. Organic stenosis (plaque) and acute
  - micro-thrombus and/or
  - plaque rupture/bleeding
  - superimposed spasm
  
- II. Development of intra-coronary thrombus
  - 3-4 hrs after occlusion
  
- III. Spontaneous clot lysis
  - in 30-50% of patients
  - after 6-12 hours (?)

INTERVENTIONAL TREATMENT OF ACUTE MI

A. Pathophysiology of MI



B. "Opportunity window" for myocardial salvage

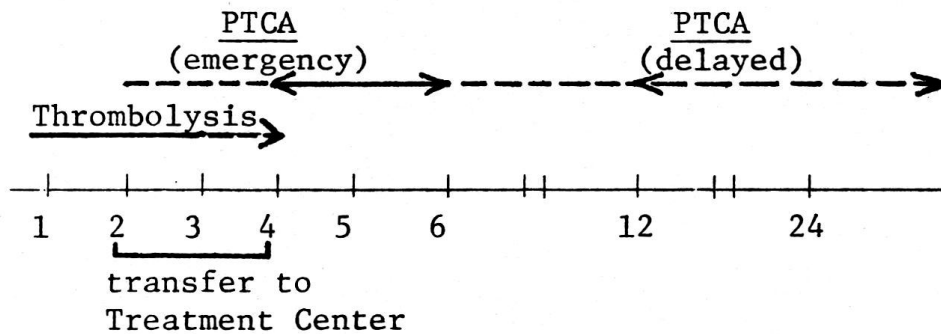


INTERVENTIONAL TREATMENT OF ACUTE MI

Sequence of therapeutic interventions (primary)

A. Delayed arrival to treatment center (> 3 hrs)

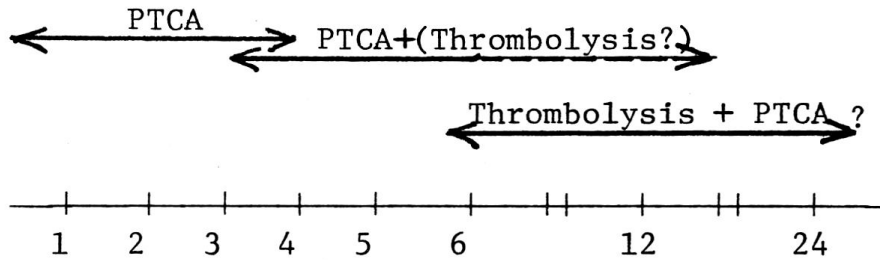
- Home
- Ambulance
- Emergency Room (delay)
- Community hospital



INTERVENTIONAL TREATMENT OF ACUTE MI

Sequence of therapeutic interventions (primary)

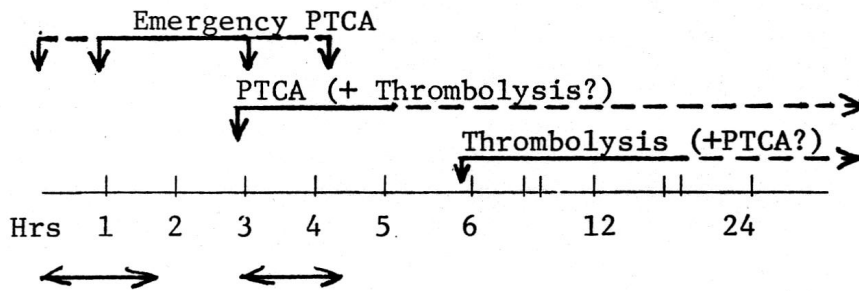
- B. Immediate availability of PTCA (< 2 hrs)  
Patient in hospital (with cath lab)  
Arriving within 1-2 hrs, lab available



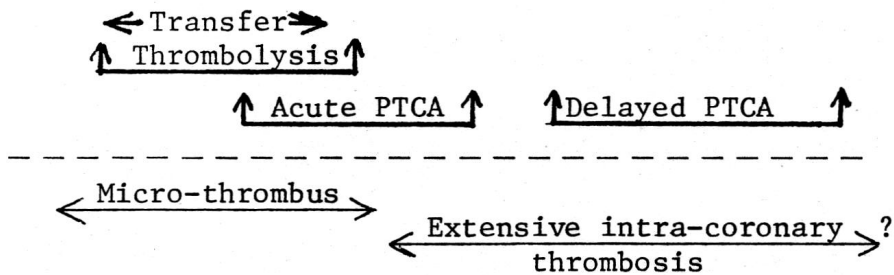
INTERVENTIONAL TREATMENT OF ACUTE MI

Sequence of therapeutic interventions

- A. In-hospital (Treatment Center)



- B. Home E.R. Cath  
Prim. Hosp



## 1993/94

(01) - T-lysis (WJW-1993)

### THROMBOLYSIS IN MYOCARDIAL INFARCTION PHASE II-B TRIAL (TIMI-II-B) - CRITIQUE

Strict inclusion/exclusion criteria -  
only 14% of all acute MI pts. qualified

In hospital mortality

- 1,288 excluded pts - 17.8%

-----  
TIMI pts - 3.3%

New reperfusion strategies are needed

(D. Cragg et al., Beaumont Hosp., AHA, 1989)

(02) - T-lysis (WJW-1993)

### THROMBOLYSIS, ARTERY PATENCY PERFUSION STATUS AND MORTALITY

939 pts with AMI ----- thrombolysis

96.6% ----- cor. angio 90 min after start of Rx

	Reperfusion	Mortality
TIMI - 3	61.8%	2.7% - 7
TIMI - 2	13.5%	6.6% - 4.6%
Occluded	24.7%	7.1% - 7

Only complete early reperfusion reduces  
in-hospital mortality

Only TIMI grade 3 perfusion of the infarct  
vessel should be interpreted as successful thrombolysis

(Vogt et al, JACC 1993; 21:1391-5)

WJW-5/93

(01.1) - T-lysis (WJW-1993)

### Definitions of Perfusion - TIMI Trial

Grade 0 - (no perfusion) - no antegrade flow

Grade 1 - (penetration without perfusion) - contrast "hung up",  
partial antegrade filling

Grade 2 - (partial perfusion) - complete distal filling, but slow  
rate of contrast material entry and clearance

Grade 3 - (complete perfusion) - brisk antegrade flow, complete  
filling and rapid clearance

### CORONARY FLOW AFTER THROMBOLYSIS FOR ACUTE MI SUMMARY OF 9 LARGE TRIALS\*

Pts (no.)	TIMI Grade 3 Flow (%)	TIMI Grade 2 Flow (%)	TIMI Grade 0-1 Flow (%)
3450	57	17	26
		\      /	
		43	

-----

Decreased mortality	No effect (?)
Reduced infarct size	↖ Morbidity
	↖ Mortality
	↖ LOS

\*TIMI,TAMI,TAPS,RAAMI,TEAM-2,ETC.  
(Lincoff and Topol, JACC 1993; 21:1396-8) WJW 5/93

-----

## THROMBOLYTIC THERAPY IN ACUTE MI

EFFECTIVE 80 - 85 %

POTENTIAL CANDIDATES 30 - 40 % OF PATIENTS

IN HOSPITAL REOCCLUSION RATE 30 - 35 %

NET EFFECT = 50 %

-----

RESIDUAL STENOSIS 80 - 90 %

MYOCARDIUM UNABLE TO RECOVER

LEADS TO INCREASED COMPLICATIONS DURING

"RESCUE" PROCEDURES

BENEFITS OF THROMBOLYSIS IN ACUTE MI

ADMINISTERED (30%) (contraindications)	<u>50%-70%</u> pts	<u>Best NET effect</u>
EFFECTIVE (short term)	70%- <u>90%</u>	[50x.9]=45% [70x.9]=63%
TIMI-3 FLOW (TIMI 0-2 inadequate)	50%- <u>60%</u>	[45x.6]=27% [63x.6]=37.8%
EARLY RE-OCCLUSIONS ( <u>10%</u> of TIMI-3 flow)	25%- <u>35%</u>	[27X.9]=24.3% [37.8X.9]=34%

CONCLUSIONS:



*Under best of circumstances*

*Sustained significant benefit  
in 25%-35% of patients*

**(WJW - 7/15/93)**

ILLUSION OF REPERFUSION

Does Anyone Achieve Optimal Reperfusion  
During Acute Myocardial Infarction?

Comparison of 60 and 90 Minute Patency Rates  
After Thrombolysis for Acute MI

	<u>No.pts</u>	<u>60 min</u>	<u>90 min</u>
Streptokinase -1	203	48	64
Anistreplase -2	210	60	70
Standard t-PA -3	304	45-62	69-75
Accelerated t-PA -4	517	65-76	82-91
-----			
Pooled	1,234	61 (58-64)*	75 (72-78)*

(1 - PIMI, 2 - TAPS, 3 - RAAMI, Smalling et al, Topol et al,  
4 - RAAMI, Smalling et al, Neuhaus et al, TAPS)

\*95 % confidence interval

(WJW, 7/20/93)

Lincoff and Topol (Circulation, 87:1792-1805, June 1993)



## ILLUSION OF REPERFUSION

### Does Anyone Achieve Optimal Reperfusion During Acute Myocardial Infarction?

"With the state-of-the art thrombolytic therapy in 1993, only the unusual patient achieves the elusive goal of optimal reperfusion for acute myocardial infarction"

"An "illusion of reperfusion" has indeed been created by the imperfect barometer of the static 90-minute angiographic view of coronary patency"

Lincoff and Topol (Circulation, 87:1792-1805, June, 1993)

(WJW, 7/20/93)

---

## CURRENT STATUS OF CORONARY THROMBOLYSIS

1. Acute MI & Shock - not effective
2. Unstable angina - not effective
3. Acute MI - occasionally effective
  - a. most effective, if used early (2-4 hrs)
  - b. only, if TIMI-3 flow is restored
  - c. some benefit from delayed use ( >12 hrs)

(WJW , 7/20/93)

## PTCA IN ACUTE MI

EFFECTIVE - 95 %

VIRTUALLY NO EXCLUSIONS

IN HOSPITAL REOCCLUSION RATE ~10 %

NET EFFECT = 85 %

RESIDUAL STENOSIS 10 - 20 %

A. EARLY REPERFUSION / EXCELLENT RECOVERY

B. LATE REPERFUSION / BETTER SCAR HEALING

REDUCED ARRHYTHMIAS

(WJW - 5/1993)

## AGGRESSIVE RX OF ACUTE MI

Availability of cath labs and  
Interventional procedures  
vs. Geographic distances and  
travel time in the U.S.

% population


travel by car

69%

30 min.

90%

90 min

Solution  success: ORGANIZATION  
(w/o cost increase)

(WJW - 5/1993)

## THROMBOLYSIS VS PTCA IN ACUTE MI

### CONCLUSIONS

1. PTCA IS SUPERIOR TO THROMBOLYSIS BOTH SHORT AND LONG TERM

2. PTCA IS THE TREATMENT OF CHOICE

3. THROMBOLYSIS SHOULD BE USED ONLY IF :  
NO RAPID ACCESS TO CATH / PTCA  
REMOTE PRIMARY CARE FACILITIES  
LATE PATIENT ARRIVAL TO PRIMARY CARE

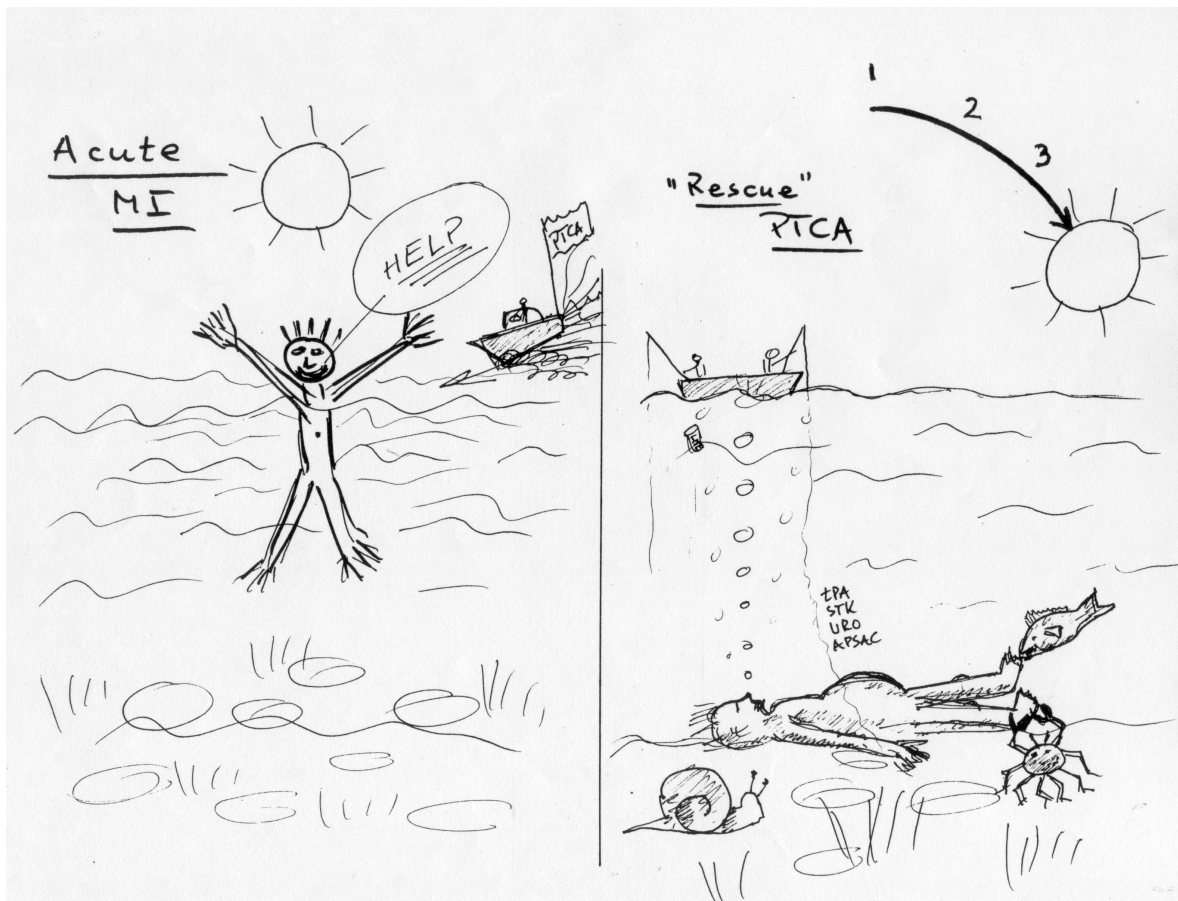
(WJW - 5/1993)

### NEEDED!

**“FAST TRACK” to PTCA - Do not waste precious time! (WJW)**

“FAST TRACK” PTCA

“Rescue” PTCA after failed thrombolysis



**PRIMARY ANGIOPLASTY IN MYOCARDIAL INFARCTION (PAMI)**

(42nd Ann. Sc. Session, Am. Coll. Cardiol, March 14-18,1993)

*395 patients with acute MI*

	<u>Primary PTCA</u>	<u>Thrombolysis (r-TPA)</u>	
Death or re-infarction	5 %	12 %	P = .015
Recurrent ischemia	10 %	28 %	P = .001
Stroke	0 %	3.5 %	P = .008

(WJW 7/2/93)

**COMPARISON**

395 PAMI pts      TIMI IIb Strategy  
\*("Watchful waiting")

<u>In-Hosp. Mortality</u>			
Anterior MI	1.4 %	11.9 %	p = .01
Non-anterior MI	3.7 %	3.2 %	p = N.S.
<u>Reinfarction rate</u>			
Anterior MI	0.0 %	6.0 %	p = .04
Non-anterior MI	4.0 %	6.8 %	p = N.S.
<u>Recurrent ischemia</u>			
Anterior MI	11.3 %	28.4 %	p = .01
Non anterior MI	9.7 %	27.8 %	p = .0002

\* catheterizing only patients with recurrent ischemia

(WJW 7/2/93)

**Results in Women**

107 Women with acute MI

	<u>Primary PTCA</u>	<u>Thrombolysis (r-TPA)</u>	
Mortality	4 %	14 %	p = .034
Recurrent ischemia	16 %	28 %	p = .14

107 women enrolled in PAMI were 3.3 times more likely to die after MI than 288 men

**Results in Elderly Patients**

150 patients with MI over 65 years old

	<u>Primary PTCA</u>	<u>Thrombolysis (r-TPA)</u>	
Mortality	5.7 %	15.0 %	p = .066
Stroke	0.0 %	6.3 %	p = .03
Death or reinfarction	8.6 %	20.0 %	p = .048
Recurrent ischemia	8.6 %	27.5 %	p = .003

## Late Reperfusion

(05.1) Late cor.reperf.-(WJW-1993)

### BENEFIT OF LATE CORONARY REPERFUSION ON VENTRICULAR MORPHOLOGY AND FUNCTION AFTER MYOCARDIAL INFARCTION<sup>1</sup>

Study of the relation between the *timing* and *adequacy* of *perfusion* of the infarct bed (after acute MI) and changes in *ventricular size* and *extent of abnormal wall motion*

*Echo* mapping over *3 months* in *91 pts*:

- a) no flow, b) collateral flow only, c) flow within 6 hrs.,
- d) flow after 5 days



(Nidorf et al, Mass. Gen. Hosp., JACC 21, No.3, 1993:683-91)

WJW 5/93

(05.2) Late cor.reperf.-(WJW-1993)

### BENEFIT OF LATE CORONARY REPERFUSION ON VENTRICULAR MORPHOLOGY AND FUNCTION AFTER MYOCARDIAL INFARCTION<sup>2</sup>

#### CONCLUSIONS:

1. Early reperfusion  smaller infarct and LV size
2. *LV enlargement* after MI may be *attenuated* by *antegrade* perfusion *regardless* of its timing (promotes scar healing  attenuates infarct expansion)
- 3 Size of regional wall motion abnormality soon after cor. occl. does not represent the extent of necrosis (viable myocardium remains dysfunctional "hibernating", if flow is not restored)

(Nidorf et al, Mass. Gen. Hosp., JACC 21, No.3, 1993:683-91)

WJW 5/93

(5.3) Late cor. reperfusion - (WJW)

### IMPORTANCE OF A PATENT INFARCT-RELATED ARTERY FOR SURVIVAL AFTER ACUTE MI

Summary of results of 5 studies with *late* thrombolysis\* (13-24 hrs after onset of chest pain, follow-up 12-48 mos)

Mortality vs. patency of infarct-related artery

	<u>No. of patients</u>	<u>Mortality (%)</u>
Patent	649	8 ( 2-16)
Occluded	286	24 (15-37)

\*ISAM, TIMI-1, West. Wash., Mathey, IUSG  
(Willard et al, U of Texas, Dallas  
CARDIO, May 1993, p.33-36)

(WJW 7/93)

ONE YEAR PROGNOSIS IN PATIENTS HOSPITALIZED FOR UNSTABLE ANGINA (USA) ~1

715 of 7157 ER pts with chest pain (F-36%)  
Hx of USA 1 wk, hospitalized then followed for 1 year

Acute MI - first 3 days - 192 pts (27%) \ = 65%  
first year (M>F) - 255 pts (38%) /

Mortality - hospitalization - 50 pts ( 7%) \ = 26%  
first year - 130 pts (19%) /

Conclusions: Pts hospitalized with USA are at high risk of MI (38%) or death (19%) during the following year

(Karlson et al,Goteborg,Sweden; Clin.Card.16:397-402,1993)

WJW 5/93

ONE YEAR PROGNOSIS IN PATIENTS HOSPITALIZED FOR UNSTABLE ANGINA (USA) ~2

<u>Non-survivors</u> (died of)	AMI - 54%	<u>One Year</u> : AMI - 26%
	CHF - 28%	<u>mortality</u> Poss MI - 24%
	Shock - 20%	Myo. Isch - 15%
		Poss. Isch - 15%
		"Non-cardiac" - 12%

Conclusions: Pts hospitalized with USA are at high risk of MI (38%) or death (19%) during the following year

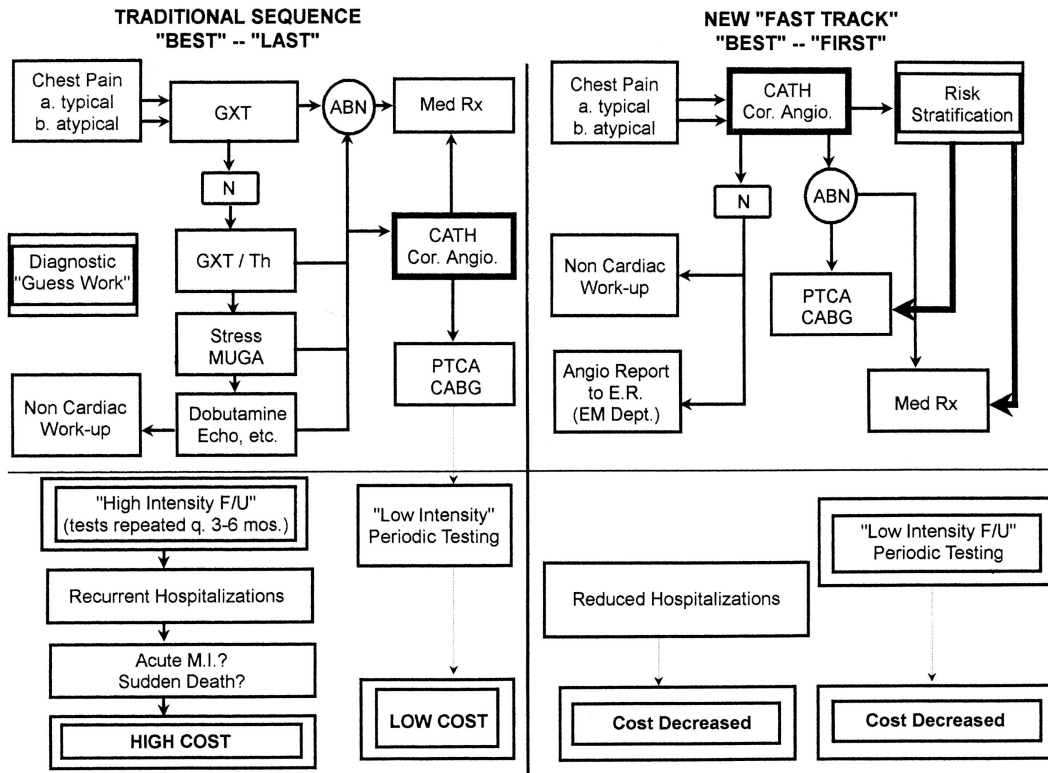
(Karlson et al,Goteborg,Sweden; Clin.Card.16:397-402,1993)

WJW 5/93

# “FAST TRACK” – WJW – 1993/1994

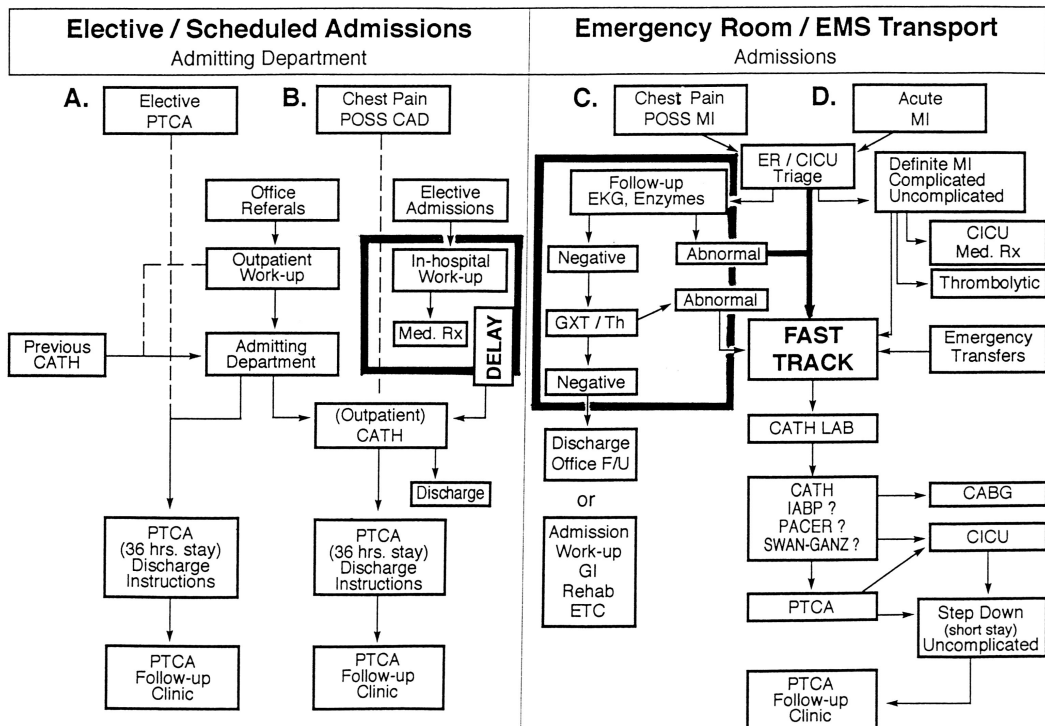
(01)“Fast Track” - WJW (1993)

## DIAGNOSING CORONARY ARTERY DISEASE

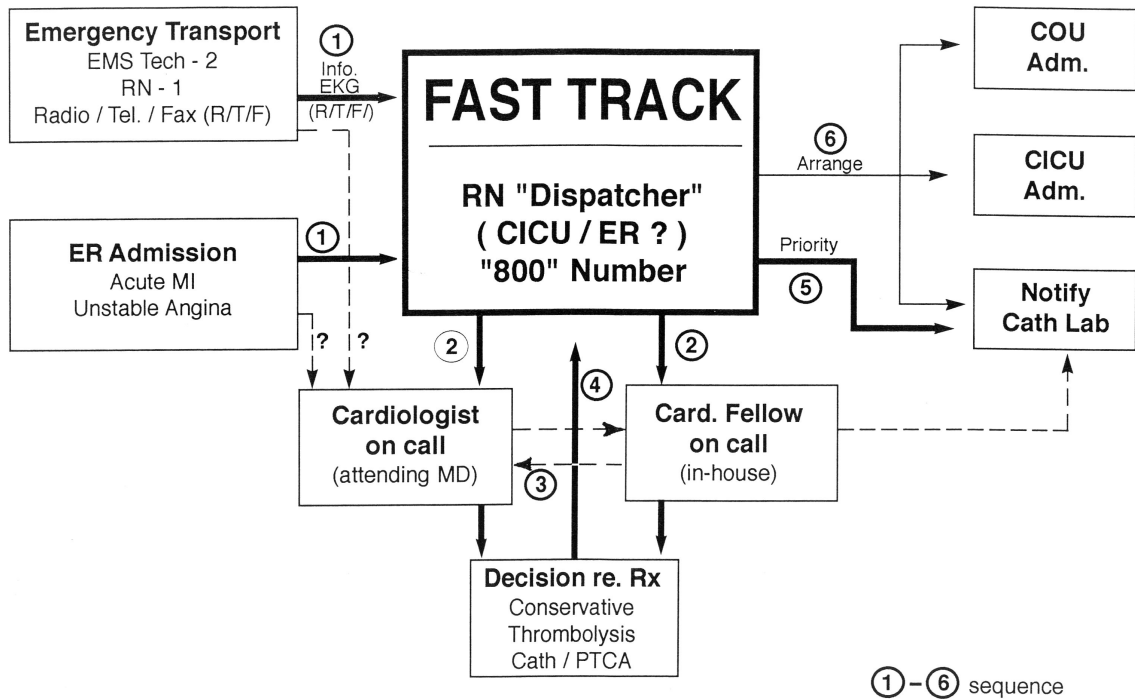


(02)“Fast Track” - WJW (1993)

## Critical / Fast Track Management of Patients with Coronary Artery Disease

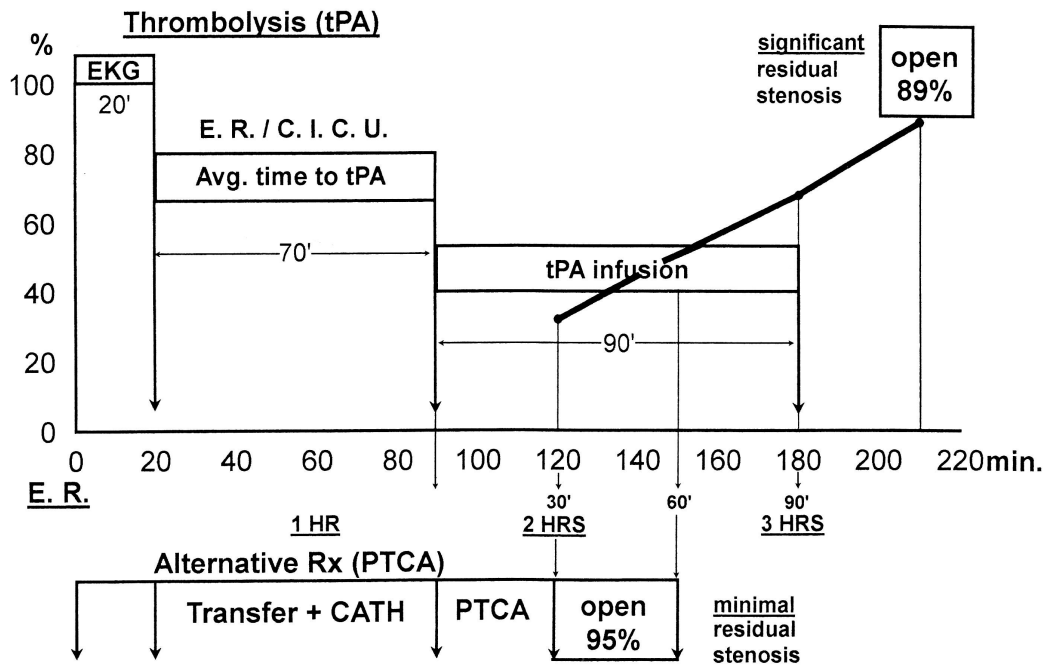


## "Fast Track" Management of Acute MI and Unstable Angina



WJW - 5/12/93

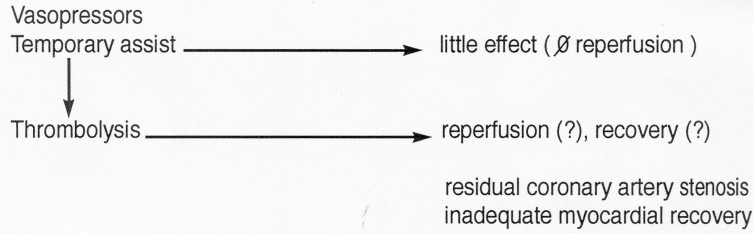
## TIME CONSIDERATIONS IN Rx OF ACUTE M.I. (based on TIMI data)



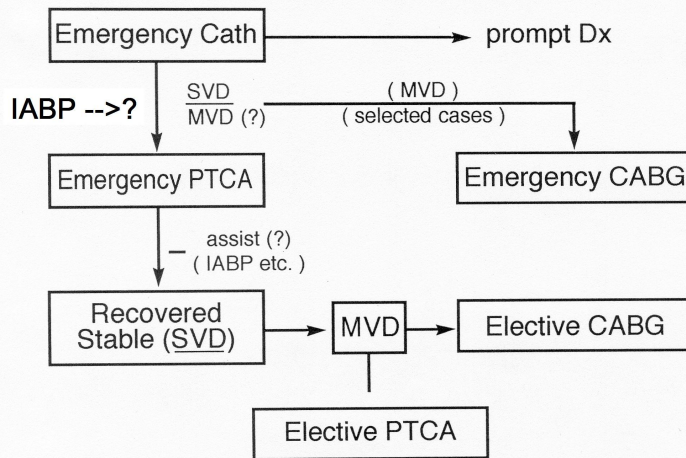


# Treatment of Acute MI and Shock

## A. Traditional



## B. Aggressive ( based on new clinical research )



SVD - single vessel disease, MVD - multi-vessel disease

WJW - 5/12/93

**Treatment of Cardiogenic shock by Intraaortic Balloon Pumping. Results in 42 patients.** A. Aris, J. Krakauer, S. Phillips, M. Ciborski, **W .J. Wajszczuk**, M. Rubenfire, Dov Jaron and A. Kantrowitz.. *Actas del VI Congreso Europeo de Cardiologia, Madrid, Spain, 1972, (Published by Editorial Paz Montalvo, Madrid, pp. 971-972, 1974).*

TABLE 1.—Status of the 42 Patients Prior to Balloon Pumping

CONDITION	Number of patients	(Percent)
With arrythmias .....	30	(71 %)
With complete anuria ...	21	(50 %)
With previous cardiac arrest .....	10	(24 %)
With previous myocardial infarction .....	13	(31 %)
On vasopressors .....	41	(98 %)
Requiring ventilatory support .....	22	(52 %)
Requiring pacemaker .....	18	(43 %)

**Balloon pump treatment reversed the shock in 39 (93%) of the 42 patients.** Of these, 27 (64%) regained circulatory stabilization allowing discontinuation of treatment and removal of the balloon. Fifteen (36%) died during treatment. Of the 27 patients regaining circulatory stabilization, 12 (28%) recovered completely and were discharged from the hospital. The causes of death among the 30 non-survivors included myocardial rupture in 13 patients.

The results suggest that this method of circulatory support is effective in treatment of patients in cardiogenic shock. Furthermore, the simplicity and safety as well as the hemodynamic effectiveness of this therapeutic modality indicates that balloon pumping may have potential role in other applications: 1) Support before, during and after cardiac surgery. 2) Improved myocardial perfusion for angina pectoris. 3) Circulatory support during coronary angiography or ventriculography. 4) Prolonged term support in chronic left ventricular failure.

**Intra-aortic phase-shift balloon pumping. Clinical applications.** Aris A, Krakauer J, Phillips SJ, Ciborski MG, Rubenfire M, **Wajszczuk WJ**, Kantrowitz A. *J Cardiovasc Surg (Torino)*. **1973**; Spec No: 647-50.

TABLE 1.—Clinical indication of intra-aortic balloon counterpulsation.

Indications	Patients
Medically refractory cardiogenic shock	42
Before, during & after open heart surgery . . . . .	13
Congestive heart failure following myocardial infarction (preshock state) . . . . .	4
Septic shock . . . . .	1
Chronic left ventricular failure (candidates for implantation of dynamic aortic patch) . . . . .	6

**Optimum results have been obtained in medically refractory cardiogenic shock. Sixty-six patients were treated with the intra-aortic counterpulsating balloon for the indications listed above. Shock was reversed in 39 (93%) of the 42 patients, and in 27 (64%) the resulting hemodynamic stabilization permitted the procedure to be discontinued.** Twelve patients (28%) were discharged from the hospital.

Peri-operative support (open heart surgery) included: 5 high-risk patients with severe bi-ventricular failure, who were pumped pre-operatively and post-operatively, all showed hemodynamic improvement, 3 survived the procedures and 2 were discharged from the hospital; six patients were unable to be “weaned” from cardiopulmonary bypass - after insertion of the balloon, 4 were able to be taken of the bypass but only 1 was a long-term survivor.

Late post-operative complications developed in 2 patients. One of them with cardiac tamponade, sternal dehiscence and profound shock, underwent re-exploration under continuous balloon pumping. He recovered and was discharged from the hospital. The other patient experienced multiple hepatic and circulatory complications resulting in severe metabolic imbalance that culminated in death. Severe congestive heart failure was treated in 4 patients. Two showed initially hemodynamic improvement but died 48 and 72 hours after initiation of pumping. The other 2 were pumped, at first continuously, later intermittently, for 35 days without deleterious effects despite the duration of pumping.

In 1 patient with gram-negative septicemia complicated by shock, pumping was ineffective and the patient succumbed.

Six patients in terminal chronic left ventricular failure underwent balloon pumping to evaluate their hemodynamic response in consideration of implantation of a permanent device. Two of them showed a good response and subsequently underwent successful implantation procedure.

Results indicate that balloon pumping is an effective form of temporary circulatory support in a variety of clinical situations involving left ventricular failure.

**Current indications for mechanical circulatory assistance on the basis of experience with 104 patients.** Wajszczuk WJ, Krakauer J, Rubenfire M, Ciborsky M, Malinowski E, Kantrowitz A: (abstr) *Am J Cardiol* 33: 176, 1974

---

(05.1)"Fast Track" - WJW (1993)

### PROGNOSIS IN CARADIOGENIC SHOCK AFTER ACUTE MI IN THE INTERVENTIONAL ERA

(Bengston et al, Duke, N. C., JACC 1992; 20:1482)

200 consec. pts. with Ac. MI & Shock  
In-hosp mortality rate - 53%  
Most important predictors of in-hosp.  
death/survival:patency of infarct artery  
cardiac index  
peak CK-MB

---

(05.2)"Fast Track" - WJW (1993)

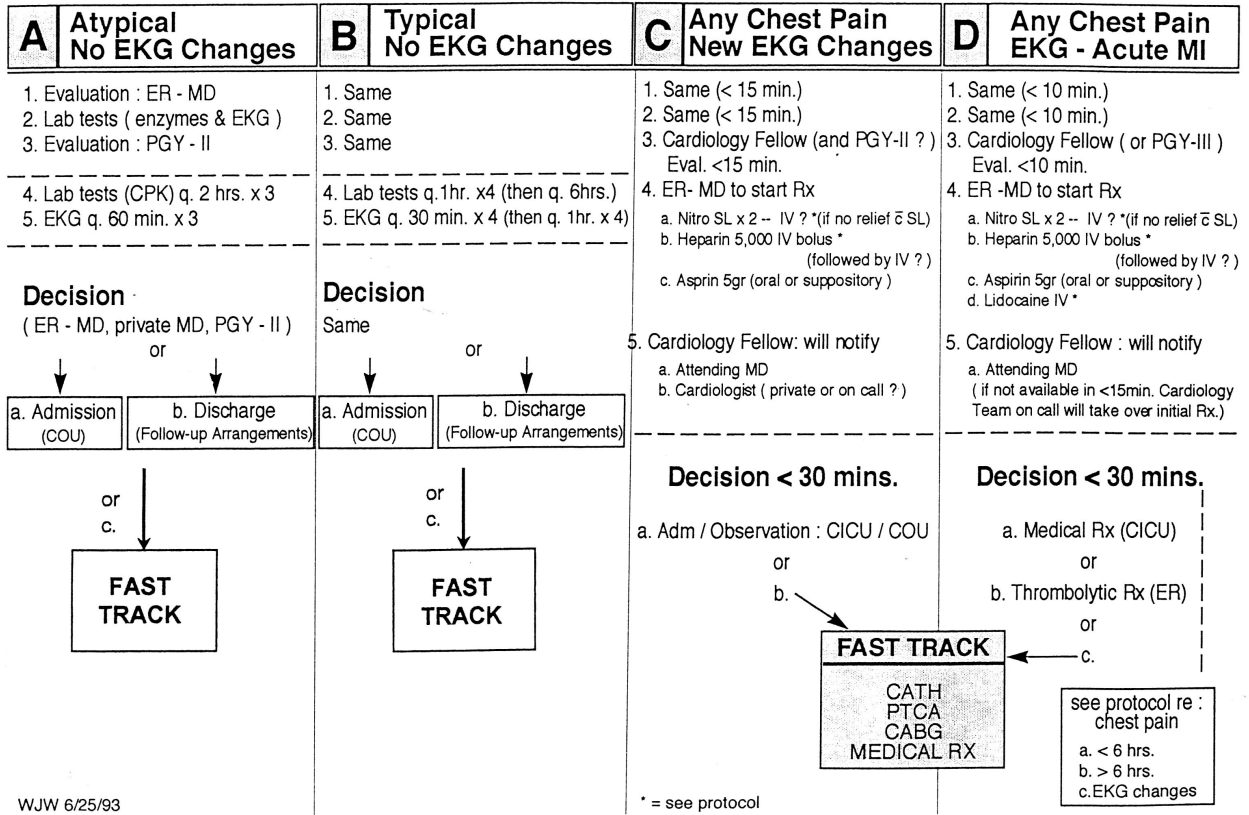
### PROGNOSIS IN CARADIOGENIC SHOCK AFTER ACUTE MI IN THE INTERVENTIONAL ERA

(Bengston et al, Duke, N. C., JACC 1992; 20:1482)

Mortality rates vs. infarct-related artery:  
patent - 33%  
closed - 75%  
unknown - 84%

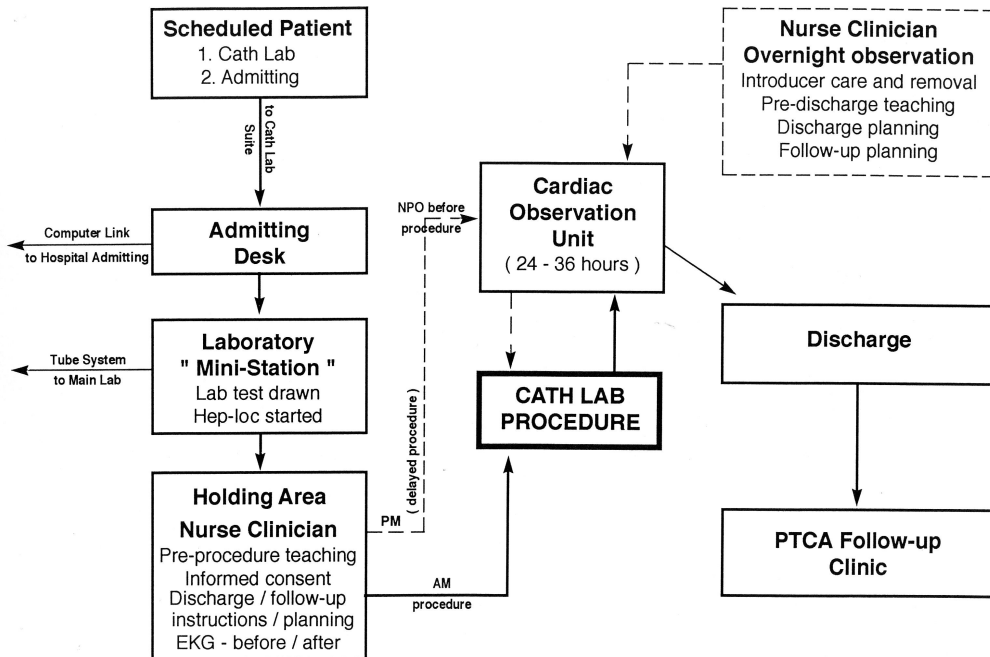
Survivors followed for a median of 2 years  
mortality rate after 1 year - 18%  
predictors: age, peak CK, EF, art. patency

## Emergency Room Chest Pain Evaluation and Treatment Protocol



WJW 6/25/93

## Elective PTCA - " Fast Track"



WJW - 6/10/93

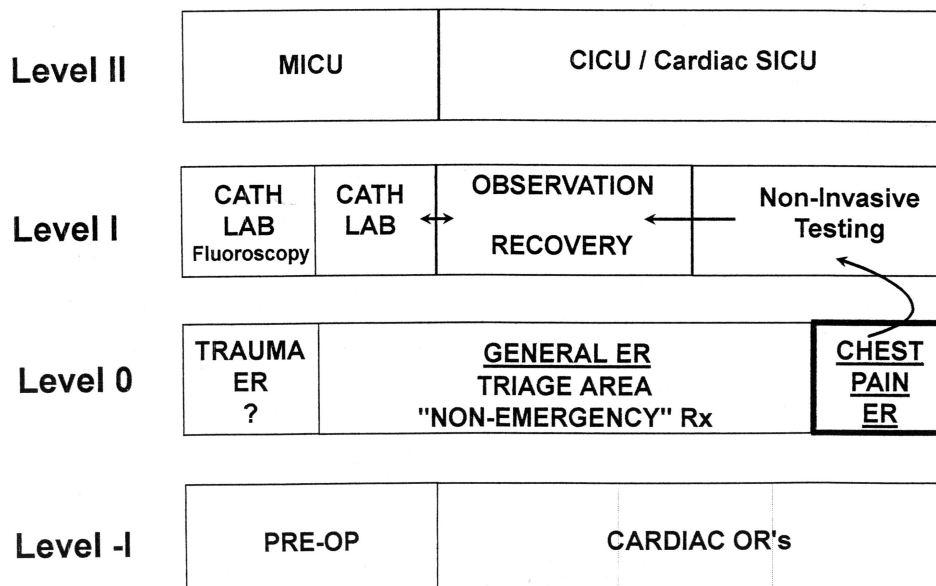
### Emergency Treatment Center – variant I

Level II	ELEVATOR
Level I	
Level 0	
Level -I	

## "Fast Track" Concept

WJW-1993

Emergency Treatment Complex with Chest Pain Center



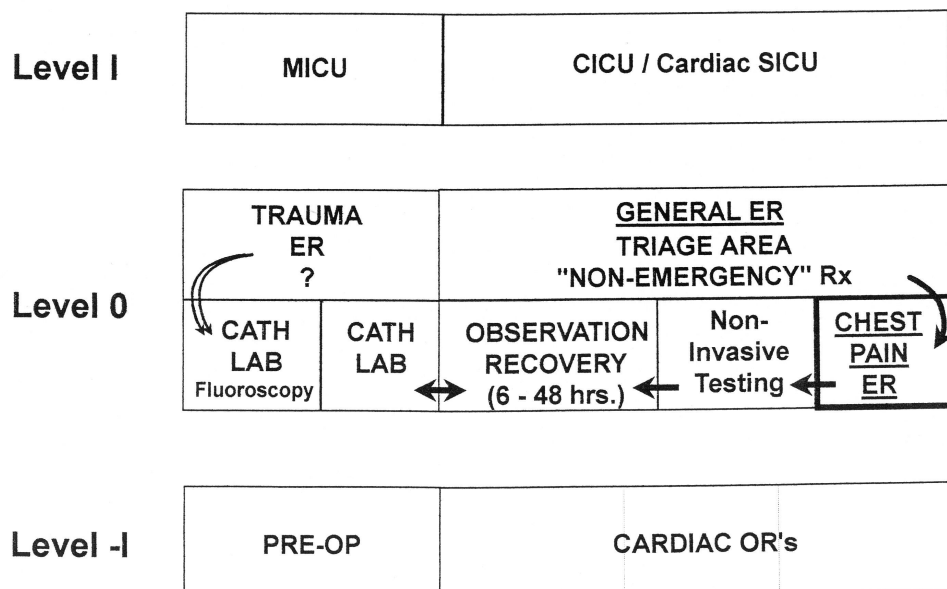
### Emergency Treatment Center – variant II

ER	Level I	ELEVATOR
	Level 0	
	Level -I	

## "Fast Track" Concept

WJW-1993

Emergency Treatment Complex with Chest Pain Center



WJW-04/1993

DIRECT PTCA IN ACUTE MI  
EARLY DISCHARGE CONCEPT

<u>PAMI</u>	<u>tPA + "watchful waiting"</u>	<u>Direct PTCA</u>
	200 pts	195 pts
recurrent isch.	28%	10.3%
reinfarction	6.5%	2.6%
died	3.0%	0.5%
<hr/>		
<u>After 2nd hosp day</u>		
recurr. isch. events	13.5%	1.0%
<u>Conclusion:</u> Early discharge may be feasible and safe		
Predictors of recurrent ischemic events -		
Treatment with tPA, Killip class > 2		

WJW-09/20/1994

SINAI HOSPITAL OF DETROIT  
Examples of "FAST TRACK" treatment in Acute MI (1993/1994)

Case A - Working hours  
MR#: 1038842 - 9/15/94

Case B - After hours<sup>†</sup>  
(Team called in)  
MR#: 0991392 - 6/29/93

Onset of pain	13:20	2h 45 min	17:15	2h 40 min
ER triage	14:10		17:40	
Call to Cath Lab (WJW)	15:10	85 min	18:30(?)	40 min
Pt in the Lab	15:20		19:15	
Arterial stick	15:35	45 min	19:30	40 min
(pacer inserted for 3 <sup>0</sup> AVB)			19:55	
Cor. Artery reperfused	16:05			

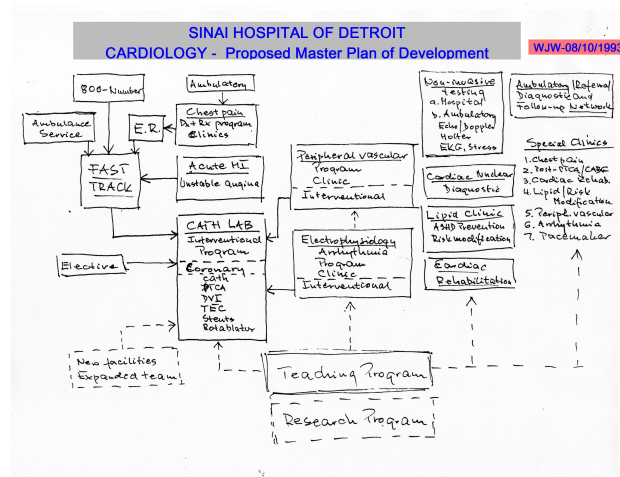
Above examples indicate the feasibility of "Fast Track" treatment in our Cath Lab, both during as well as after regular working hours.

- - - - -

\*case report submitted for publication

# Cardiac Interventional Procedures and Proposals to the Sinai Hospital Administration for development of the “FAST TRACK” and Cardiovascular Treatment Center (for Detroit Metropolitan Area)

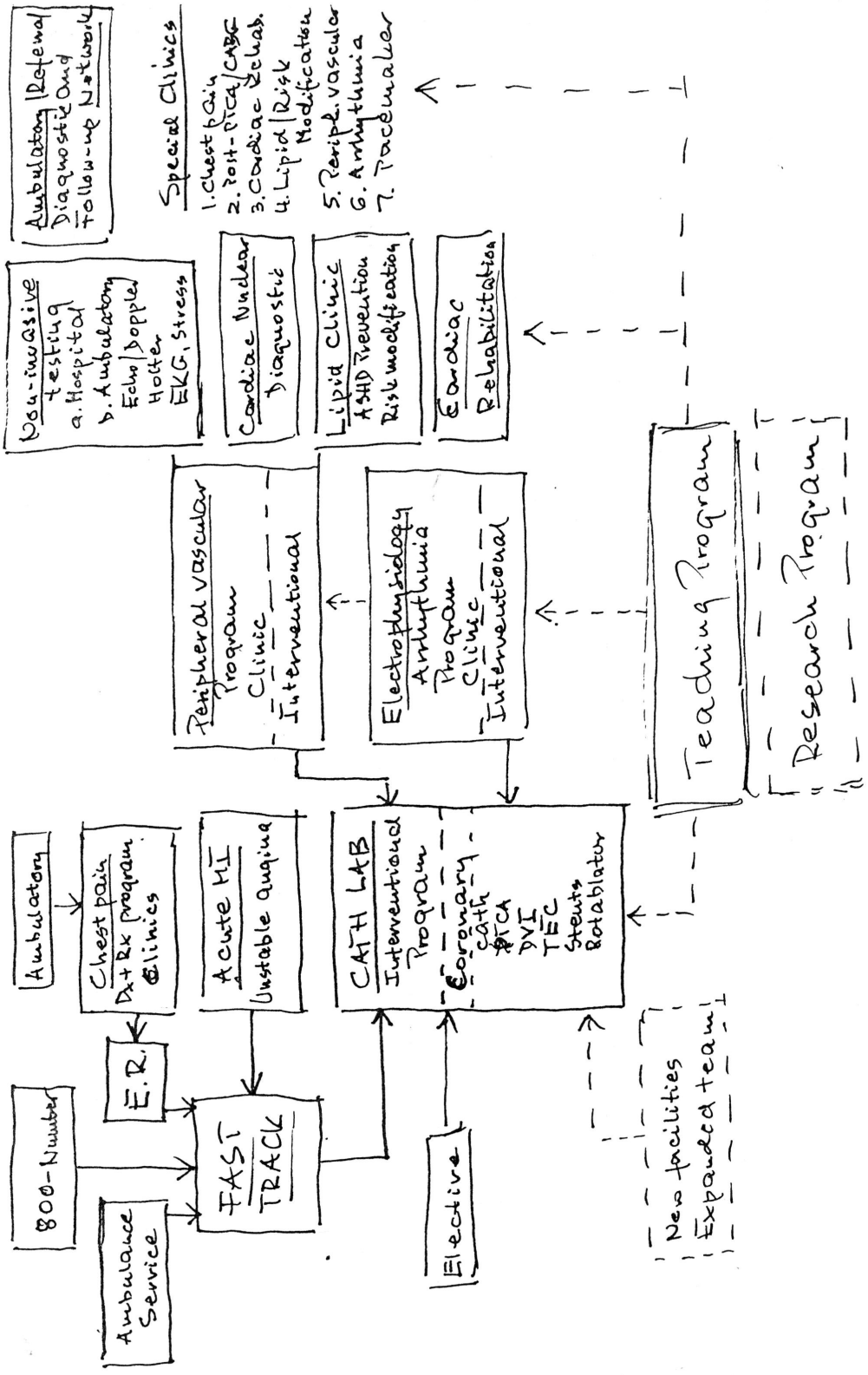
- Jan. 12.1984 - Organization of a Program and Referral Center for Emergency Non-surgical Treatment of Acute Coronary Insufficiency (Preliminary Proposal)
- Sept. 25, 1984 - Organization of a Program and Referral Center for Emergency Non-surgical Treatment of Acute Coronary Insufficiency **and Myocardial Infarction** – (Brief Outline)
- Aug. 8, 1990 - Chest Pain and Acute Myocardial Infarction Treatment Center
- 1990/1991 - New Hospital Administration**
- Jan. 28, 1991 - Enhancement and Expansion of Invasive and Interventional Cardiology Services – Proposal and Critical Overview; PTCA Follow-up Clinic
- April 24, 1991 - Job descriptions for Cardiac Catheterization Lab./Treatment Center
- July 22, 1991 - Peripheral Vascular Diagnosis and Treatment Center (Clinic, Angioplasty)
- Aug. 29, 1991 - Coronary Angioplasty (PTCA) Follow-up Clinic (est. 800-1000 pts.)
- Nov. 4, 1991 - Proposal: Sinai Cardiovascular Institute
- May 7, 1993 - Chest Pain Evaluation and Treatment in the Emergency Room
- July 19. 1993 - Emergency Treatment of Acute MI – organization of a “Referral Hospitals/ Providers Network”
- 1887/1993 - Emergency Non-surgical Treatment of Acute Coronary Insufficiency and MI (Myocardial Infarction) System/Service Development
- June 17, 1993 - New Coronary Interventional Devices at Sinai Hospital (Stents, rotablator and TEC Coronary Extraction Catheter)
- Aug. 12, 1993 - Emergency Room Computer Link for Rapid Retrieval of Cardiac Cath. Data
- Aug. 12, 1993 - **Master Plan for Cardiology Section and Services**



# SINAI HOSPITAL OF DETROIT

## CARDIOLOGY - Proposed Master Plan of Development

WJW-08/10/1993





# Coronary Angioplasty – PTCA Presentations, Abstracts, Manuscripts


## 1/ Detroit Heart Club - October 1985

FACTORS CONTRIBUTING TO A LOW RECURRENCE RATE OF LESIONS AFTER  
PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY


Waldemar J. Wajszczuk, M.D., Connie Meier, R.N., M.S.N., Nancy Piot, R.N.

Presented on December 6, 1985

## 2/ Abstract → 43 ACC 1993

	American College of Cardiology 43rd Annual Scientific Session ABSTRACT FORM ABSTRACT DEADLINE: FRIDAY, SEPTEMBER 10, 1993	No 039387
<hr/>		
1. Abstract Category Number <u>0 3</u> (See page 3) (2 Digit)	Read Instructions Before Typing Abstract in This Space	DO NOT DUPLICATE
2. Corresponding Author: <input type="checkbox"/> Check if F.A.C.C. <u>WALDEMAR J WAJSZCZUK MD</u> First Middle Initial Last/Family Degrees SINAI HOSPITAL	PTCA Balloon Inflation Pressure and Duration Requirements for Successful Dilatations. Waldemar J. Wajszczuk and Connie Meier, Sinai Hospital, Detroit, MI.	

## 3/ Abstract → 43 ACC 1993

	American College of Cardiology 43rd Annual Scientific Session ABSTRACT FORM ABSTRACT DEADLINE: FRIDAY, SEPTEMBER 10, 1993	No 100987
<hr/>		
1. Abstract Category Number <u>0 3</u> (See page 3) (2 Digit)	Read Instructions Before Typing Abstract in This Space	DO NOT DUPLICATE
2. Corresponding Author: <input checked="" type="checkbox"/> Check if F.A.C.C. <u>WALDEMAR J. WAJSZCZUK M.D.</u> First Middle Initial Last/Family Degrees SINAI HOSPITAL	Comparison of Non-Compliant and Compliant PTCA Balloons in 2186 dilated lesions - is one better or should lesion characteristics and response determine the selection. Waldemar J. Wajszczuk, Sinai Hospital, Detroit, MI.	

## 4/ Abstract – 1994

Treatment of Resistant Coronary Artery Lesions Using High Pressure Balloon Angioplasty – Michael D. Sellers, MD and Waldemar J. Wajszczuk, MD. (03.30.1994)

=====

### Unpublished manuscripts

“Accelerated protocol” for Emergency Coronary Angioplasty in Acute Myocardial Infarction – Waldemar J. Wajszczuk, MD and Kesari Sarikonda, MD.

Submitted for publication, May, 25, 1994, to American Heart Journal (AHJ-15630). Rejected – June 16, 1994.

Submitted for publication to, July 1, 1994, to CATHETERIZATION AND CARDIOVASCULAR DIAGNOSIS. (#94-457). Rejected – August 24, 1994.

## 1994

**PTCA Ballon Inflation Pressure and Duration Requirements for successful dilatation – Usefulness of Pressure Gradient Measurements.** – Waldemar J. Wajszczuk, MD and Connie Meier, P.A.-CMS.

Submitted for publication, Aug. 1, 1994, in CATHETERIZATION AND CARDIOVASCULAR DIAGNOSIS

(Rejected – Aug. 25, 1994).

**Comparison of non-compliant and compliant balloons – experience with 2,186 of dilated stenoses** – Waldemar J. Wajszczuk, MD – unpublished.

**Angioplasty of Recurrent “Resistant” Coronary Lesions with Very High Pressure Dilatation.**

**A Case Report.** Waldemar J. Wajszczuk, MD, Lary S. Goldman, MD and Mary E. Lazar, MD.

Submitted for publication, June 22, 1994 to The American Journal of Cardiology (No. 6-27-0951).

Rejected – June 29, 1994.

Submitted for publication, July 14, 1994, to American Heart Journal (#15788).

Rejected – July 21, 1994.

Submitted on Nov. 12, 1994, to CATHETERIZATION AND CARDIOVASCULAR DIAGNOSIS.

Rejected. ???

**High Pressure Percutaneous Transluminal Coronary Angioplasty (PTCA) of Resistant Refractory Coronary Artery Stenoses** - Waldemar J. Wajszczuk, MD and Michel D. Sellers, MD. Unpublished.

**“Fast Track” Diagnosis and Treatment of Chest Pain and Coronary Artery Syndromes Including Acute Myocardial Infarction. Emphasis on Early Coronary Arteriography – An Alternate Point of View.** – Waldemar J. Wajszczuk, MD

## 1994 - 2013

**„Natural History” of Coronary Angioplasty (POBA) from a single operator’s perspective – from an early “craft” to current sophisticated “art”** - Waldemar J. Wajszczuk, MD

## 2007

**Coronary Angioplasty – Personal Experience and Unique Procedure Protocol.**

Waldemar J. Wajszczuk, MD, Sinai Hospital of Detroit, MI (1981-1997). – Distributed locally.

## 2013

**Single Operator’s Experience from 2,500 POBA Dilatations During 1,500 Procedures Performed in the 20<sup>th</sup> century – Contemporary Comments.**

**(Doświadczenia i Konkluzje na Podstawie Własnych Doświadczeń i Obserwacji podczas 2500 dylatacji w 1500 zabiegach PTCA [POBA] w latach 1981 – 1997).** Waldemar J. Wajszczuk, MD – presented in Warsaw, Poland – August 20, 2013).

## WJW – Additional Training in Special Procedures

July 31, 1991

Waldemar J. Wajszczuk, M.D., Director  
Cardiac Catheterization Laboratory and  
Interventional Cardiology Treatment Center

### COURSE ATTENDANCE

The following is the list of recent attendance at the demonstration courses or "hands-on" training and licensing programs in support of my request for privileges in:

- a) peripheral angioplasty
  - b) use of Excimer laser in coronary and peripheral angioplasty
  - c) use of Rotablator devices in coronary and peripheral angioplasty
  - d) use of Simpson rotational atherectomy devices in coronary and peripheral angioplasty
1. St. Luke's Medical Center, Milwaukee, Wisconsin (Dr. Gerrald Dorros)-  
March 2-3, 1989 - A live Cath lab, small group demonstration in  
coronary and peripheral balloon angioplasty and atherectomy devices.
  2. "Peripheral Vascular Interventions, 1991 - A live demonstration course"  
(St. Luke's Medical Center and the William Dorros-Isadore Feurer  
Interventional Cardiovascular Disease Foundation) - May 5-7, 1991,  
Milwaukee, Wisconsin.
  3. "New Frontiers in Vascular Interventions" (training course sponsored by  
the American College of Cardiology) - June 6-7, 1991, Cedars-Sinai  
Medical Center, Los Angeles, California.
  4. "Interventional Cardiology" (American College of Cardiology sponsored  
course), June 12-14, 1991, Bethesda, Maryland.
  5. Training course sponsored by Advanced Interventional Systems, Inc.  
(AIS) and Cedars-Sinai Medical Center - "Hands-On" training course with  
certification for the use of Excimer laser for coronary and peripheral  
angioplasty - August 5-6, 1991, Cedars-Sinai Medical Center, Los  
Angeles, California.
  6. "Angioplasty, 1991: A Live Demonstration Course" - presented by San  
Francisco Heart Institute at Seton Medical Center, August 12-15, 1991,  
San Francisco, California.
  7. Certifying "hands-on" training course in the use of Simpson Atherocath  
for coronary atherectomy, sponsored by Devices for Vascular  
Intervention, Inc., to be scheduled by the company in Chicago or Boston  
in September, 1991. (no certification needed for peripheral  
angioplasty).
  8. Certifying "hands-on" training course in the intra-coronary use of the  
Rotablator device, sponsored by the Heart Technology, September or  
October, 1991 (no certification needed for peripheral angioplasty).

9. "Hands-on" training course in peripheral angioplasty and application of Excimer laser in coronary and peripheral vascular angioplasty - St. Luke's Medical Center, Milwaukee, Wisconsin (Drs. Dorros and Cummins) -September, 1991.
10. "Directional Atherectomy Symposium IV" sponsored by the Pacific Foundation for Cardiovascular Research and Sequoia Hospital (Dr. Simpson et al) - Live demonstration course, October 9-12, 1991, San Francisco, California
- 
11. "Palmaz-Schatz Coronary Stent" - physician/nurse training course, sponsored by Johnson & Johnson Interventional Systems Co. at Lenox Hill Hospital, New York, December 9, 1995.