

LA TELEMEDICINA

NELL' AMBITO DI UNA RETE OPERATIVA PER

IL TRATTAMENTO DELL' INFARTO MIOCARDICO ACUTO:

L' ESPERIENZA DI MANTOVA



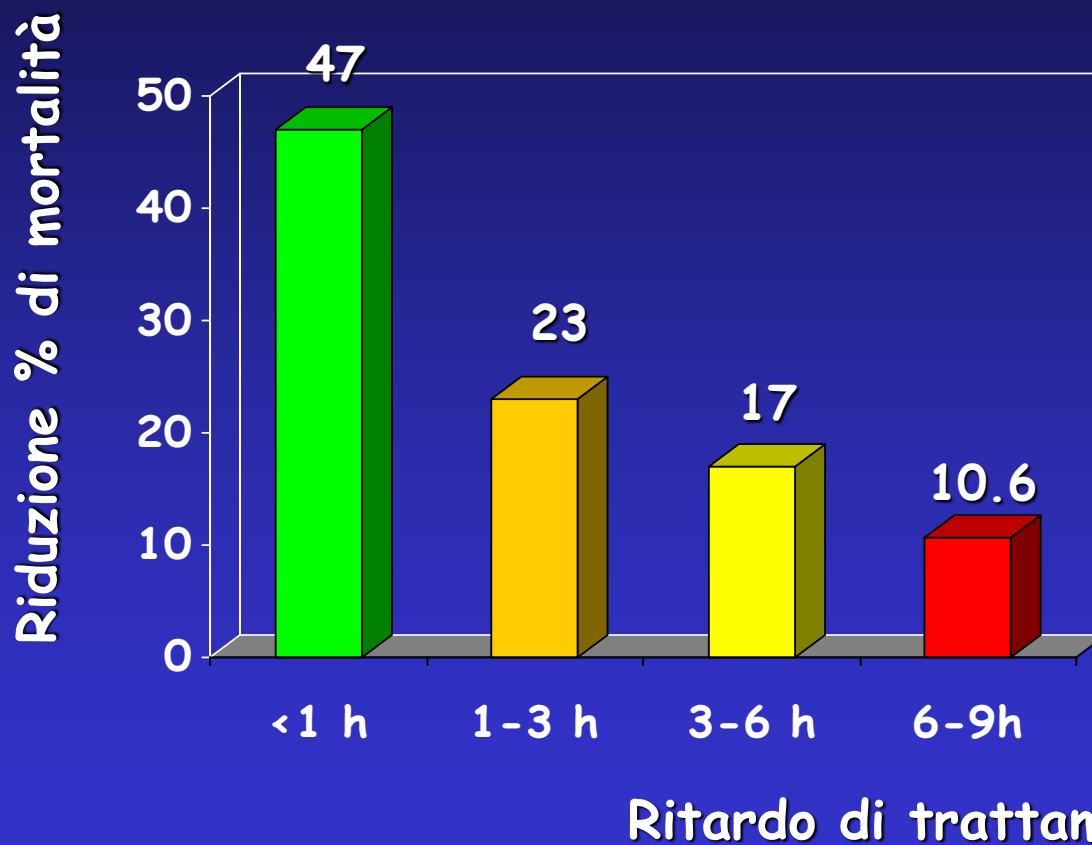
Corrado Lettieri

LABORATORIO DI EMODINAMICA

DIPARTIMENTO DI CARDIOLOGIA - AZIENDA OSPEDALIERA "CARLO POMA" - MANTOVA

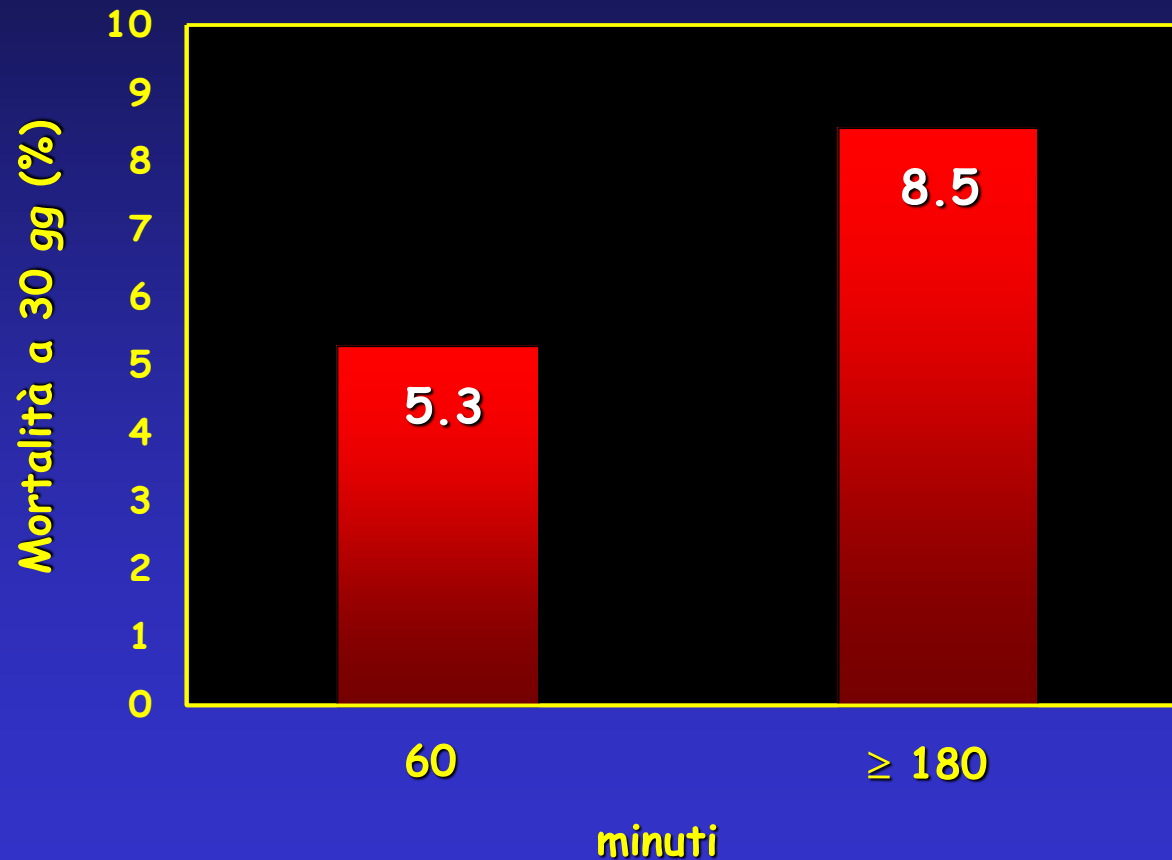
Riduzione di mortalità per IMA

GISSI I: IL TEMPO



Lancet 1986

PTCA primaria: tempo "door to balloon" e mortalità



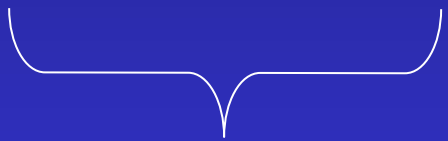
FATTORE TEMPO

ritardo evitabile

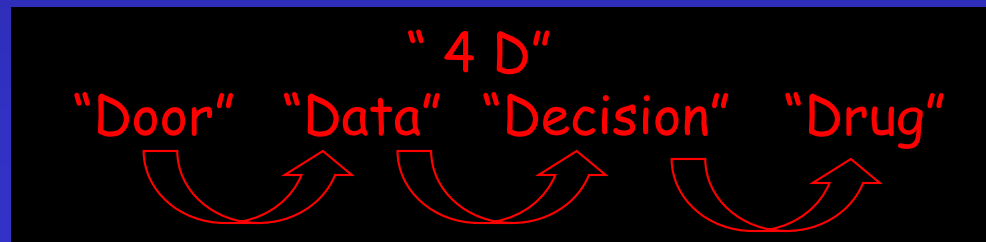


extraospedaliero

intraospedaliero

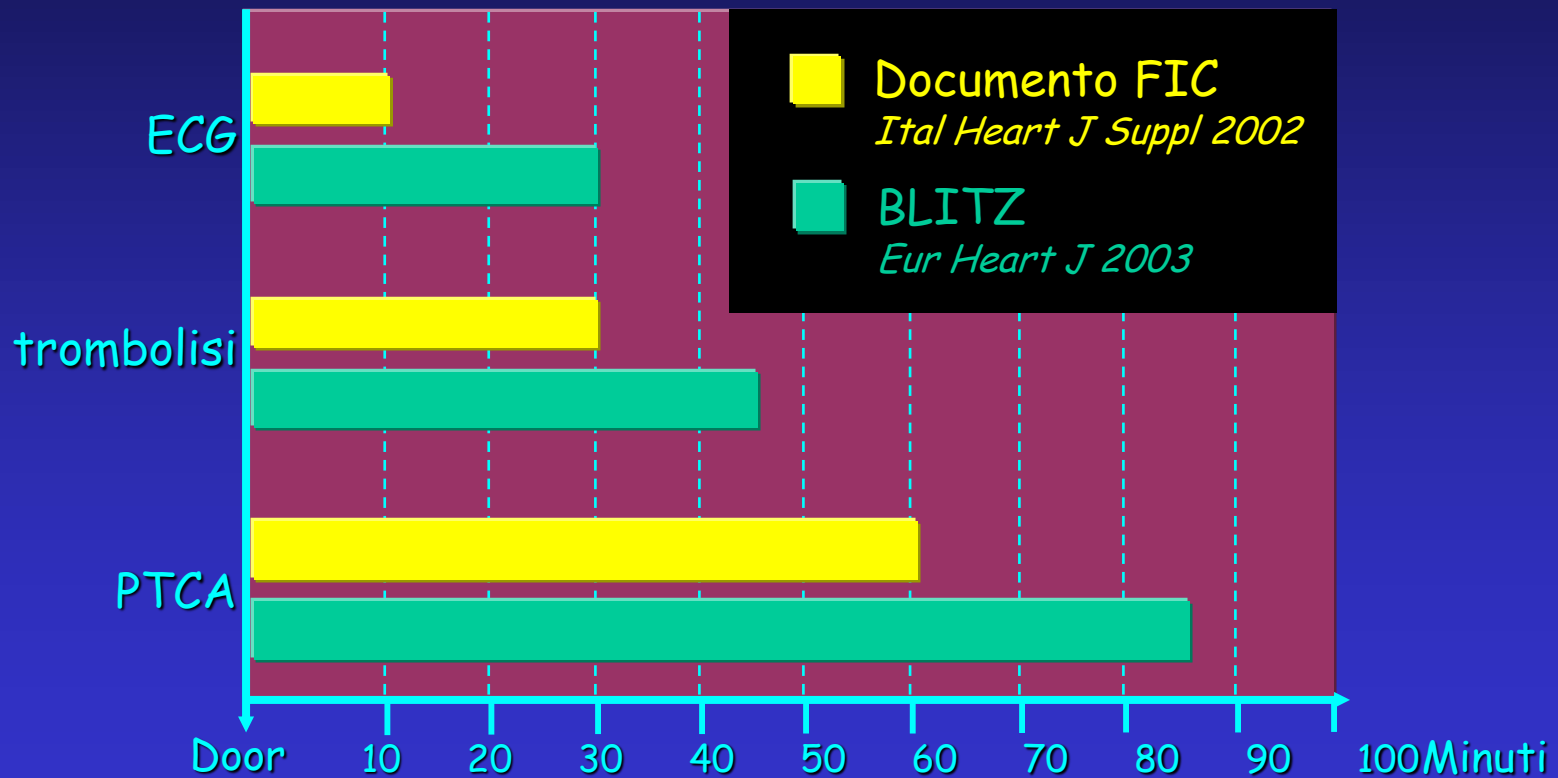


 paziente
 trasporto



Documento di consenso FIC su STEMI vs BLITZ

Tempi intraospedalieri





MANTOVA EMERGENZA CUORE: FINALITA' DEL PIANO

RIDUZIONE DELLA MORTALITA'

RIDUZIONE DEI TEMPI
PER LA RIPERFUSIONE

PARI OPPORTUNITA' DI CURA
PER I PAZIENTI CON IMA
NELLA PROVINCIA
DI MANTOVA

RICORSO ESTENSIVO ALLA PCI PRIMARIA

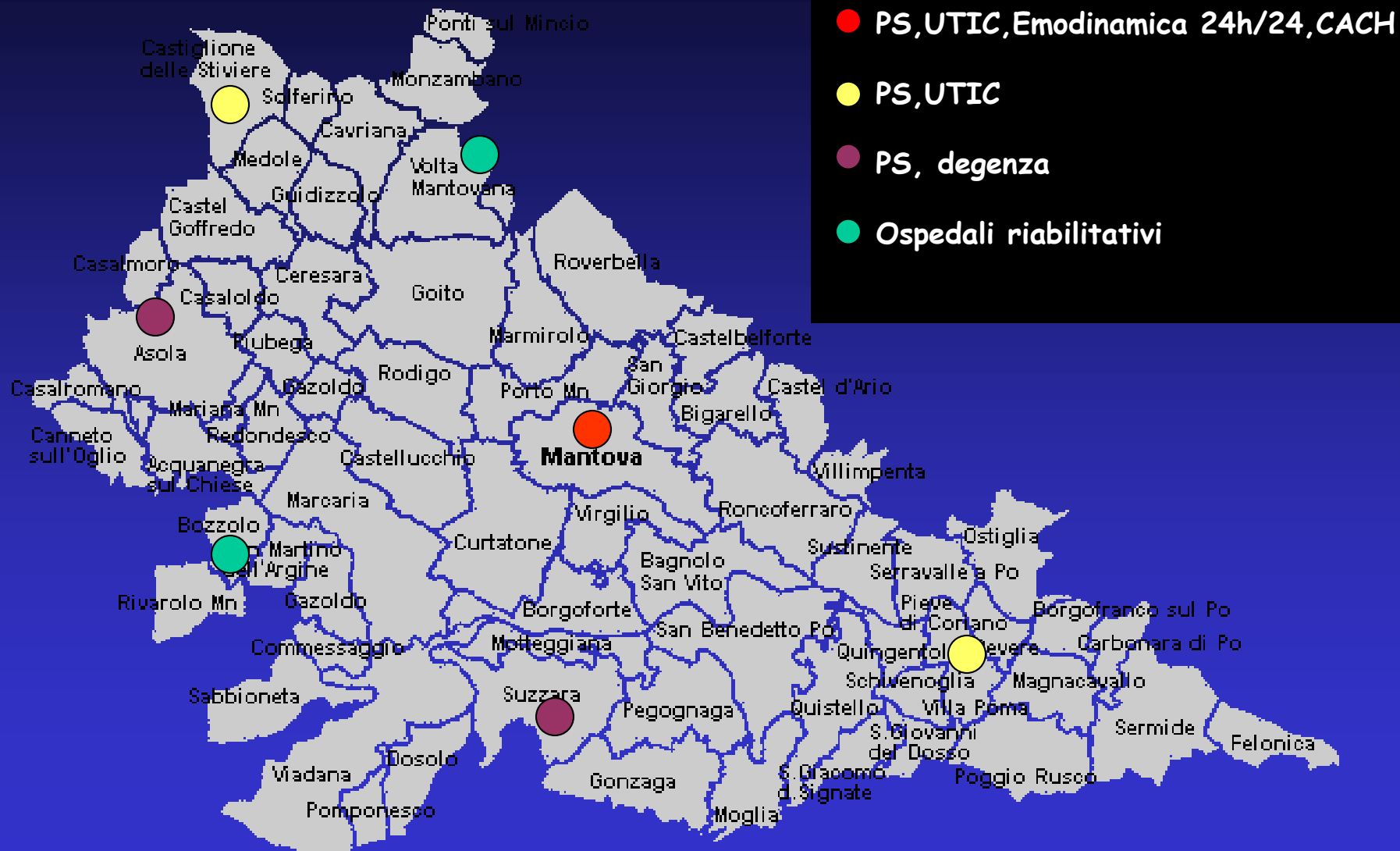


TRATTAMENTO DELL' INFARTO MIOCARDICO ACUTO A MANTOVA E PROVINCIA:

ARTICOLAZIONE DEL PIANO

- ✓ COLLEGAMENTO TELEMATICO TRA I PUNTI CARDINE DELLA CATENA DI CURA
- ✓ STRATIFICAZIONE PRECOCE DEL RISCHIO DEL PAZIENTE
- ✓ OTTIMIZZAZIONE DEI PERCORSI ORGANIZZATIVI EXTRA ED INTER-INTRAOSPEDALIERI

DISTRIBUZIONE E DOTAZIONE DEI PRESIDI DELL'AZIENDA OSPEDALIERA "C. POMA" MANTOVA E PROVINCIA





DISTRIBUZIONE DEI MEZZI ALS DEL "118" DELL'AZIENDA OSPEDALIERA "C. POMA" MANTOVA E PROVINCIA



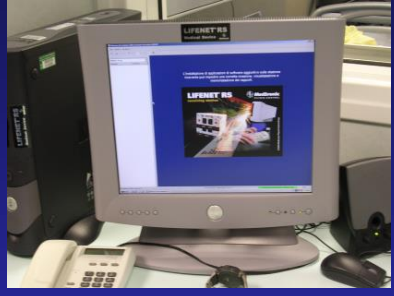
COLLEGAMENTO TELEMATICO

"LIFEPACK 12"



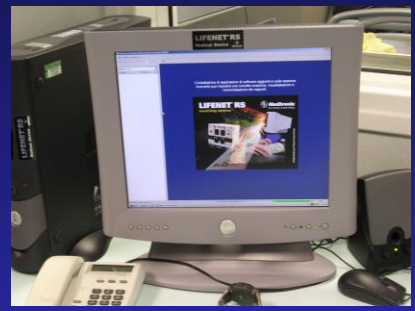
ALS "118"

"LIFENET RS"



UTIC MANTOVA

"LIFENET RS"



UTIC PERIFERICA

GSM

GSM

FAX

FAX



PS ED OSPEDALI
NON DOTATI DI UTIC

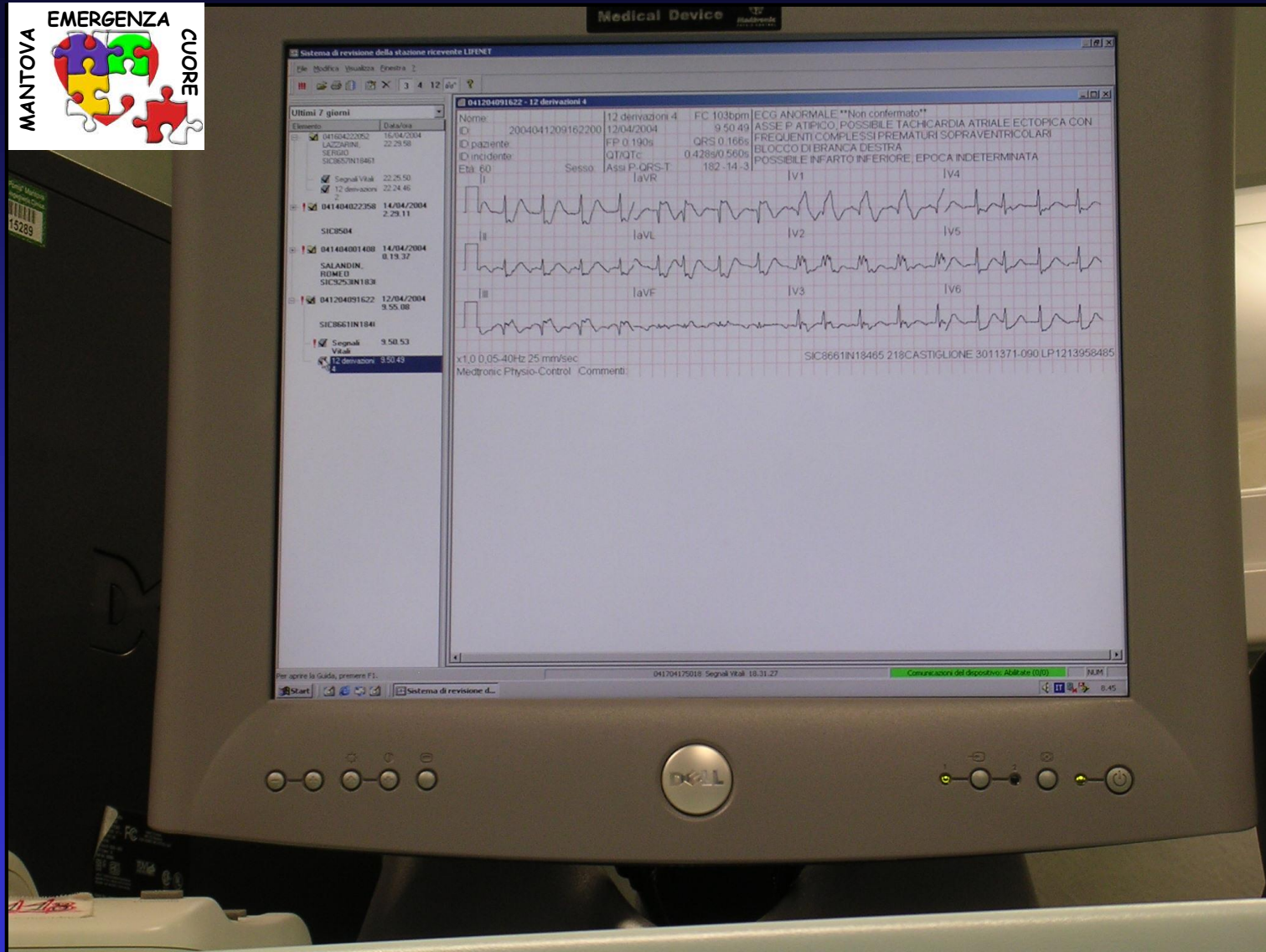
POSTAZIONE UTIC MANTOVA



RICEZIONE TRACCIATO ECG 12 DERIVAZIONI



15289





STRATIFICAZIONE DEL RISCHIO

TIMI RISK SCORE FOR STEMI

HYSTORICAL POINTS

age \geq 75 aa	3
65-74	2
DM or HTN or angina	1

EXAM

SBP $<$ 100 mmHg	3
HR $>$ 100 bpm	2
Killip II-IV	2
Weight $<$ 67 kg	1

PRESENTATION

anterior STE or LBBB	1
time to RX $>$ 4h	1

RISK SCORE 30 DAY MORTALITY IN INTIME II (%)

0	0.8
1	1.6
2	2.2
3	4.4
4	7.3
5	12
6	16
7	23
8	27

Morrow et al. Circulation 2000; 102: 2031-7

STRATIFICAZIONE PRECOCE DEL RISCHIO E TERAPIA PREOSPEDALIERA

ALS "118"



UTIC

trasmissione ECG

dati anamnestici e clinici

terapia preospedaliera

ASA 330 mg ev

eparina (bolo ev) 40-70 UI/kg

morfina ev (se indicata)

beta-bloccanti ev (se indicati)

nitroderivati ev (se indicati)

abciximab

TNK

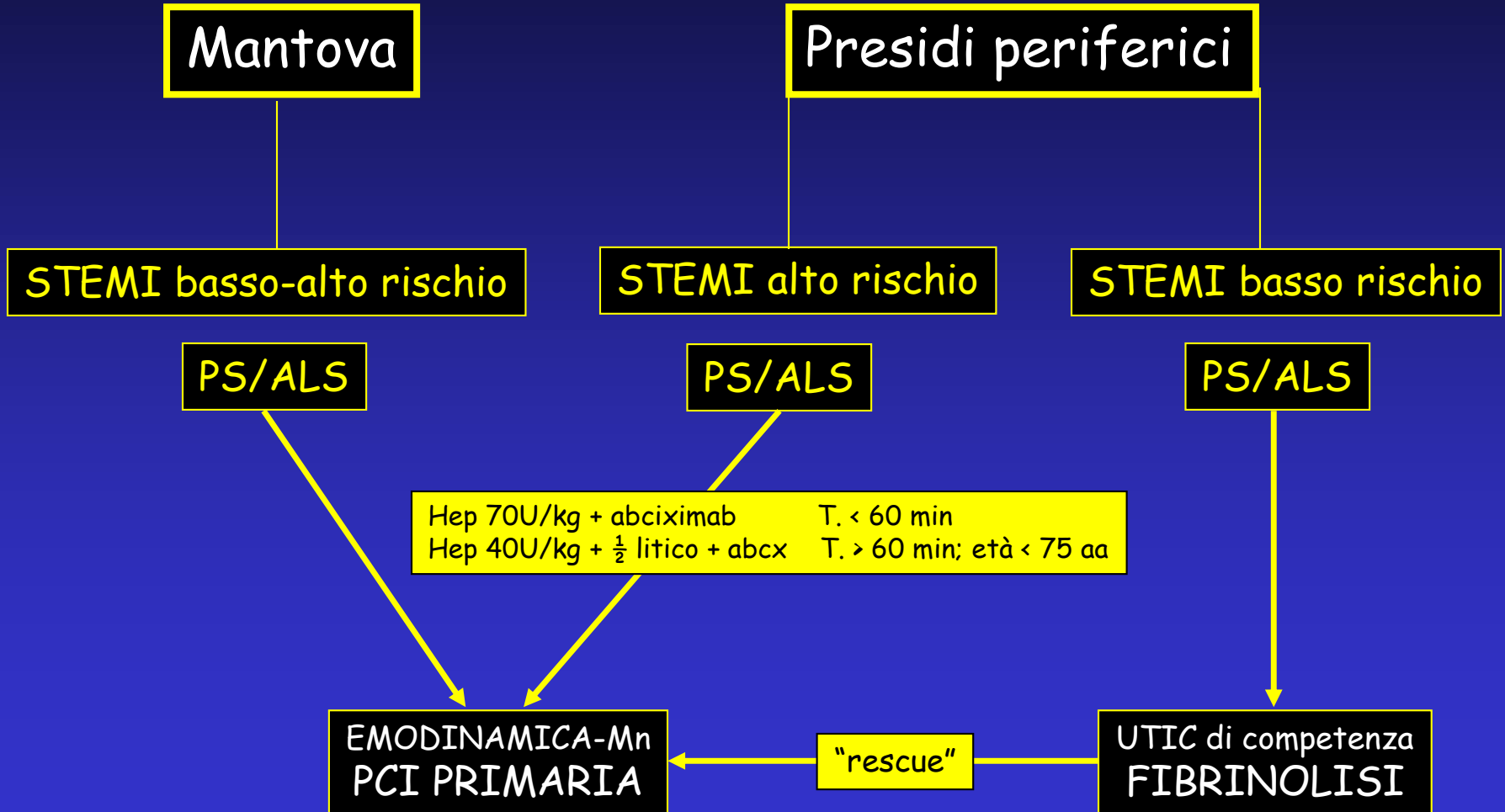
lettura ECG

consulto telefonico

indicazioni ricovero

indicazioni terapia

PERCORSI EXTRA - INTER ED INTRAOSPEDALIERI





Rete provinciale per la terapia dell'infarto miocardico acuto a Mantova: risultati di due anni di attività

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*Dipartimento di Cardiologia, *Servizio Sanitario Urgenza-Emergenza 118, Azienda Ospedaliera "Carlo Poma", Mantova*

Background. Since June 2001, in the province of Mantova, we have been carrying out a program for the management of acute myocardial infarction based on early assessment of the patients' risk profile, on telematic connection among care centers and on optimization of in- and out-of-hospital critical pathways for the access to care.

Methods. Our network provides connection among the following centers: advanced life support ambulances, 7 hospitals, 3 coronary care units, 1 cath lab on call 24 hours a day for primary angioplasty, 1 thoracic surgery division. This program, through its strong telematic platform, allows early assessment of myocardial infarction, and provides primary angioplasty to all high-risk patients, being fibrinolytic treatment reserved only to the low-risk patients admitted in peripheral hospitals.

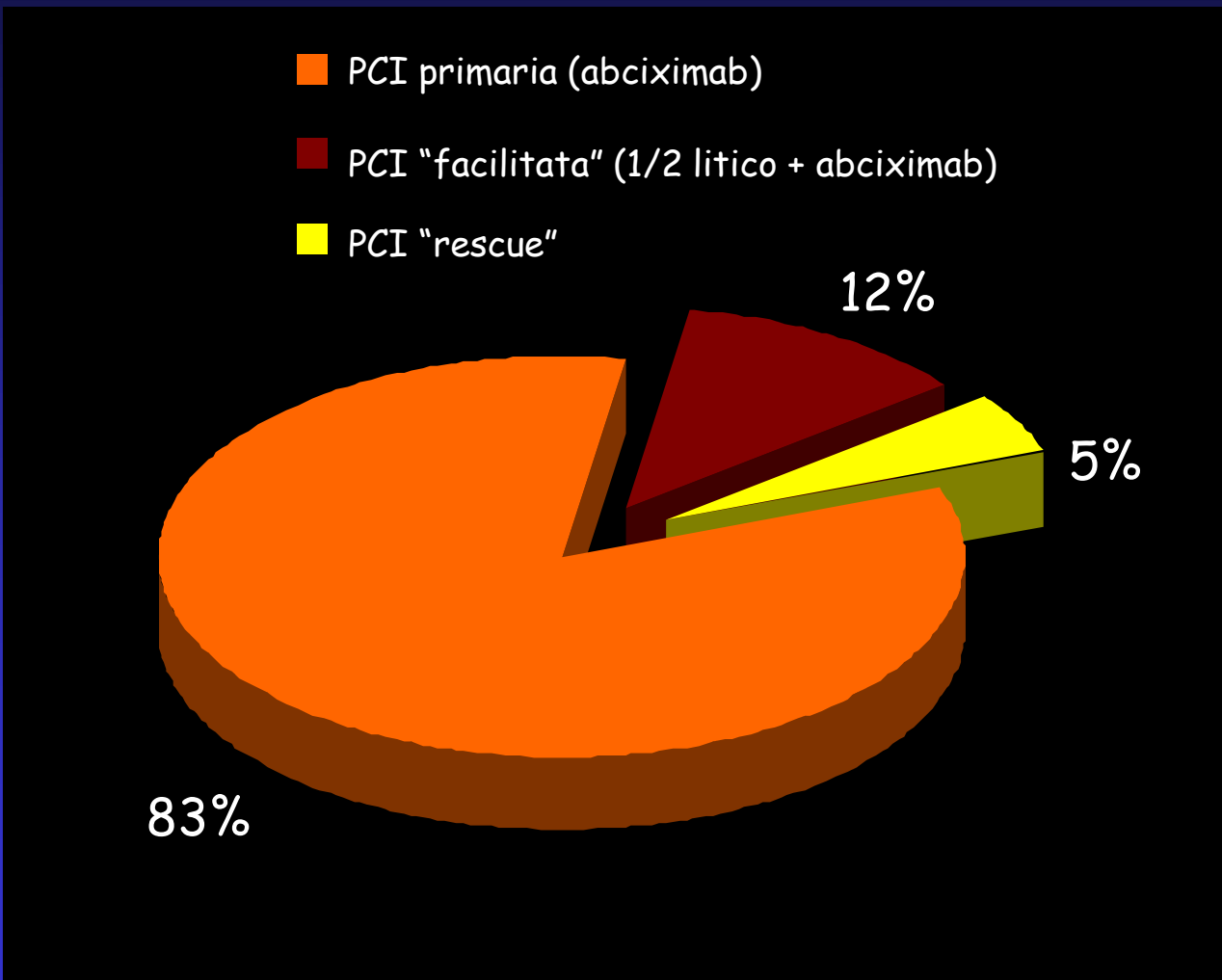
Results. Two hundred and twenty patients with acute myocardial infarction were treated with angioplasty; 179 (81%) patients underwent primary angioplasty, 26 (12%) patients facilitated angioplasty and 15 patients (7%) rescue angioplasty; 121 patients (55%) were first admitted in the Mantova hospital, 65 patients (30%) were referred to Mantova from peripheral hospitals and 34 patients (15%) were directly transported to the cath lab by advanced life support ambulances. Procedural success was obtained in 98% of cases, with 0.5% intraprocedural mortality. In-hospital mortality was 5.5%, while mortality of cardiogenic shock patients was 36%. Recurrence of acute myocardial infarction occurred in 1% and major bleeding in 2.2% of patients. One patient with cardiogenic shock died during transport. Mean door-to-balloon time was 73 min with 39% reduction in the second period of recruitment after telematic connection.

Conclusions. This program, developed in the setting of a provincial network for the management of acute myocardial infarction, provided primary angioplasty to all high-risk patients, with a high procedural success rate. Within a few months, time to treatment was minimized by the employment of telematic facilities.

(Ital Heart J Suppl 2003; 4 (10): 838-849)

PCI PRIMARIA: STRATEGIE DI TRATTAMENTO

400 pazienti



ANGIOPLASTICA NELL' IMA : RISULTATI

MORTALITA' TOTALE	26/400	(6.5%)
NON SHOCK	10/356	(2.8%)
SHOCK	16/44	(36%)



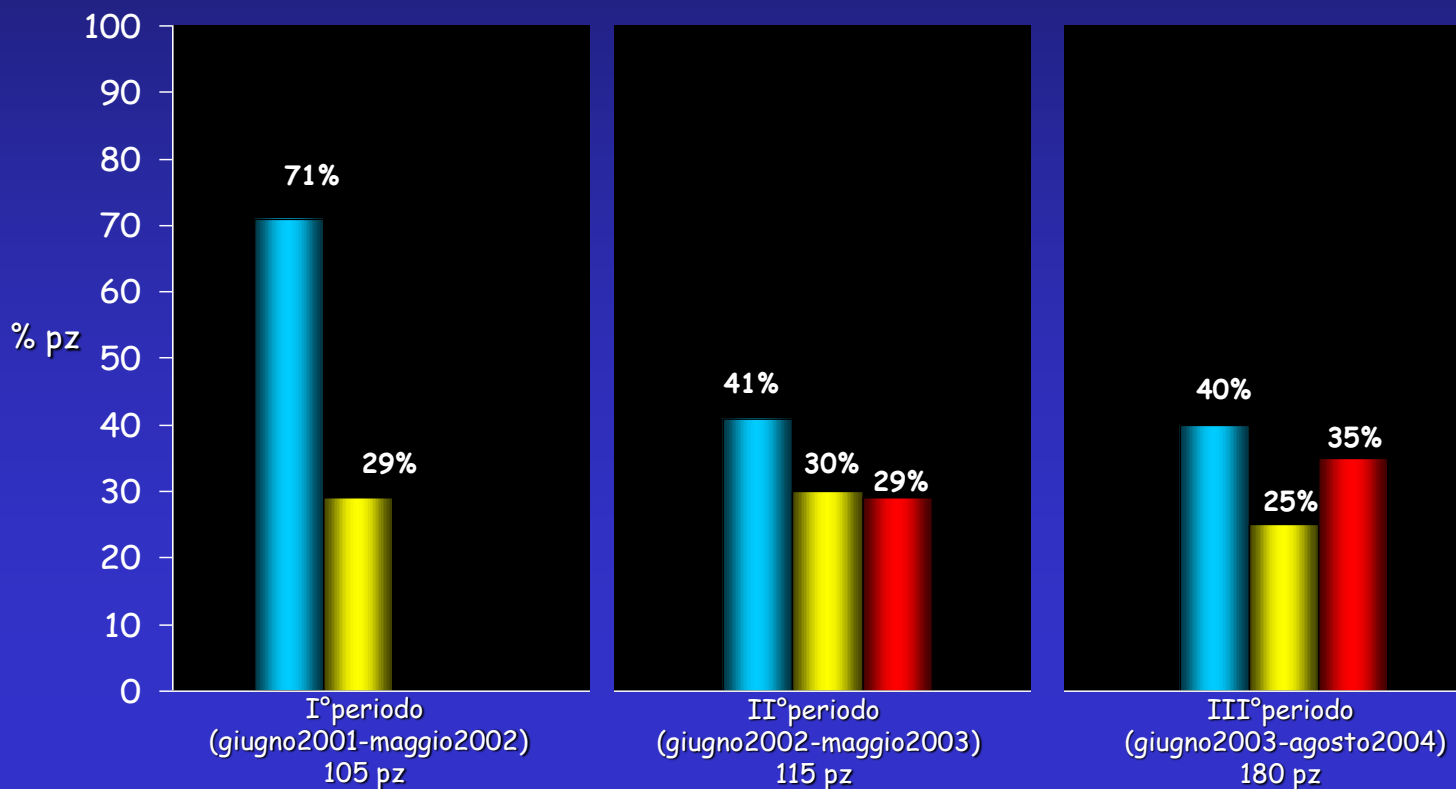
AFFERENZE AL CATHLAB x PCI PRIMARIA

400 Pz

PS-Mantova
194 (48%)

Presidi Periferici
109 (27%)

ALS 118
99 (25%)

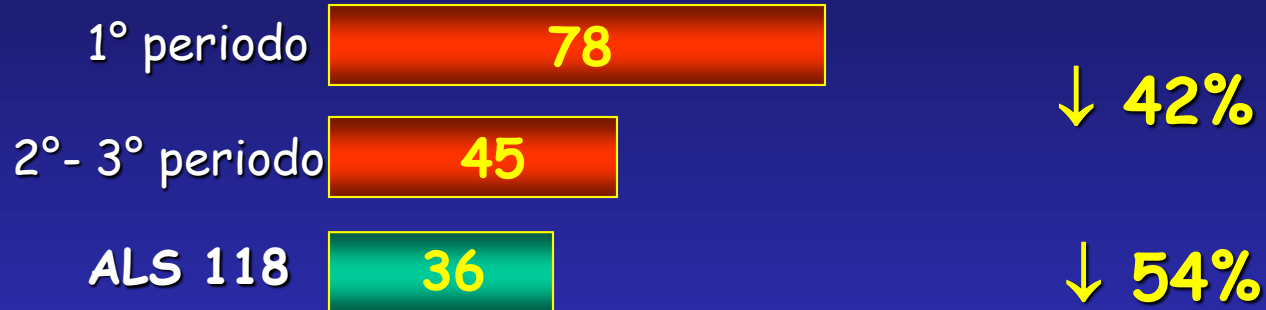




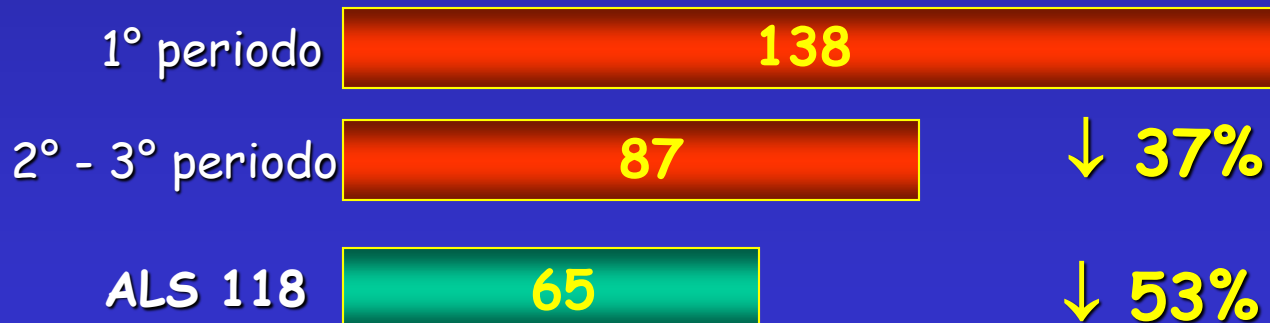
"DOOR TO BALLOON" MEDIO (min)

escluse le PCI "rescue"

Mantova



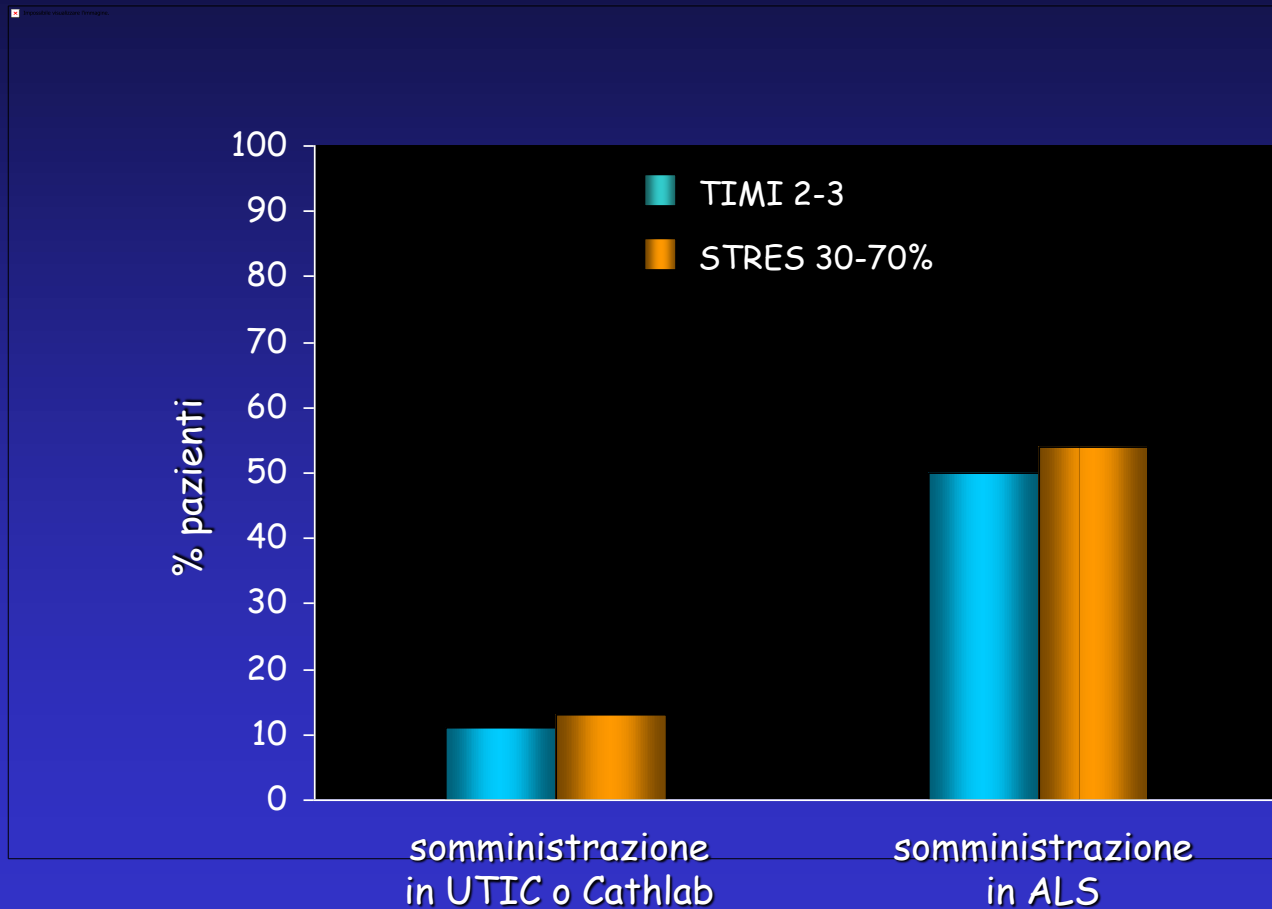
Provincia





INFLUENZA DEL PRETRATTAMENTO SUGLI INDICI DI RICANALIZZAZIONE E RIFERFUSIONE PRE-PCI

escluse le PCI "rescue" (20)



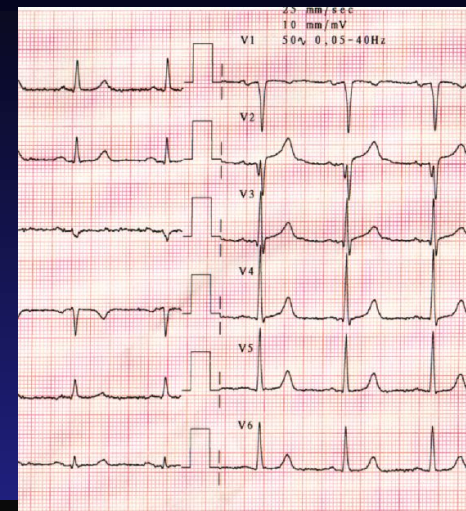
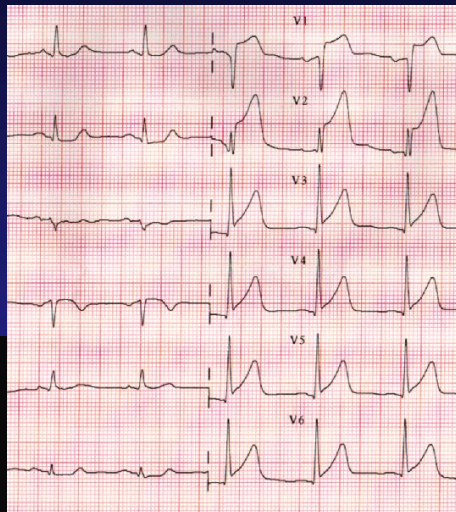
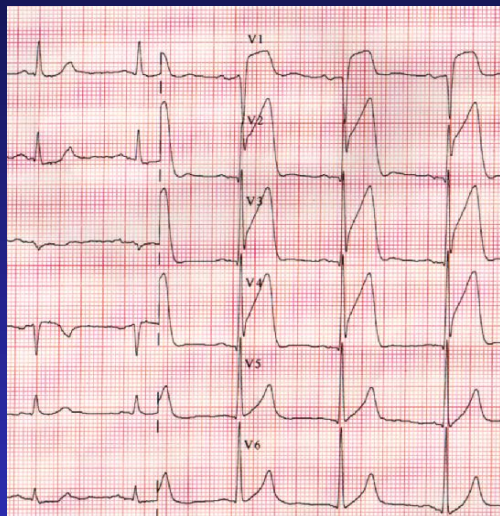
Post PCI



dopo ASA, Hep, abciximab



"basale"





ACCURATEZZA DELLA DIAGNOSI PREOSPEDALIERA

totale ECG trasmessi via GSM = 730

ECG con sopraslivellamento ST = 105 (14%)

IMA = 99

Pericardite = 5

Dissezione aortica = 1

CONCLUSIONI

- ✓ Notevole contributo della telemedicina e del trasporto diretto ALS - Emodinamica alla riduzione dei tempi di trattamento
- ✓ L'efficacia di una strategia riperfusiva "farmaco-meccanica" precoce (PCI primaria o "facilitata")