SIFO CAMPANIA
SCA,DIABETE ED APPROPIATEZZA PRESCRITTIVA
NAPOLI 23/10/2013
PRESENTAZIONE DI CASO CLINICO N°2

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Case Study 1

Clinical Presentation

- 53-year-old African American man
- Height: 6′0″; weight: 245 lb (111 kg)
- Presented by ambulance to ED at 6 PM on a Thursday with severe 6/10 chest pain, which lasted 30 minutes
- Currently pain free

History

- No previous stroke or TIA
- No smoking history
- Sedentary lifestyle, rarely exercises
- Father has hypertension, alive
- Diabetes and hyperlipidemia for the past 7 years
  - Currently on an oral hypoglycemic agent and a statin

Linee-Guida ESC in collaborazione con EASD su Diabete/preDiabete e Malattie Cardiovascolari

	Grado di Raccomandazione	Livello di Evidenza
▪ It should be considered to classify patients with DM as at very high or high risk for CVD depending on the presence of concomitant risk factor and target organ damage	IIa	C
▪ It is not recommended to assess the risk for CVD in patients with DM based on risk scores developed for the general population	III	C
▪ It is indicated to estimate the urinary albumin excretion rate when performing risk stratification in patients with DM	I	B
▪ Screening for silent myocardial ischaemia may be considered in selected high risk patients with DM	IIb	C

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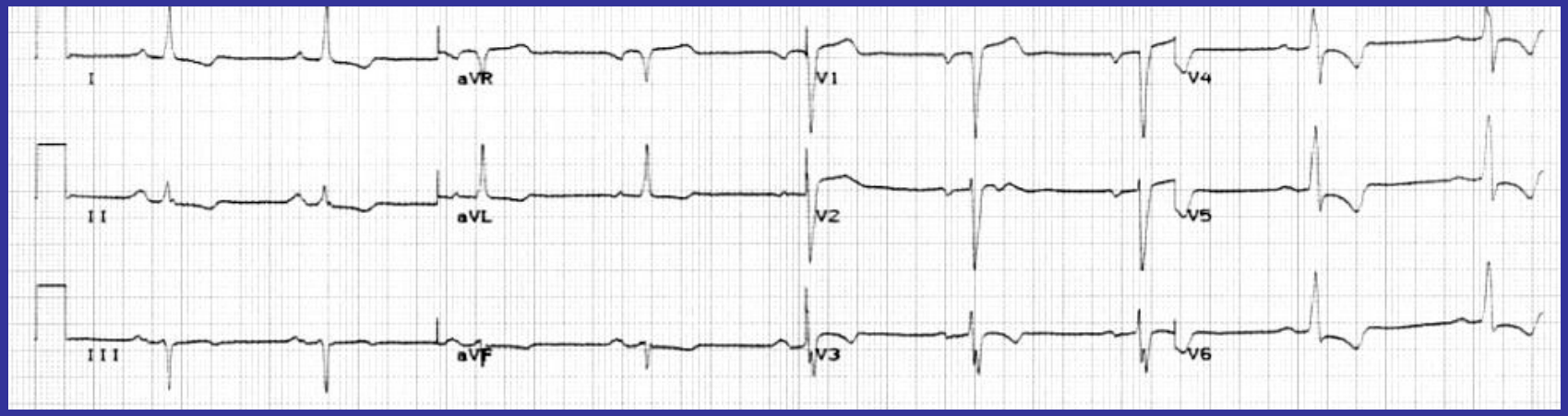
Case Study 1 *(cont'd)*

Patient Evaluation

- BP 111/89 mm Hg
- HR 54 bpm
- CrCl 76 mL/min
- Physical exam
  - No relevant findings
  - No signs of prior stroke or TIA
- Noninvasive
  - EKG: Sinus bradycardia, left atrial enlargement; ST-T wave abnormality in most leads
  - Troponin 0.3 ng/mL (ULN 0.1)
  - CK-MB 9.5 ng/mL (ULN 7.0)
  - Glycemia 240 mg/dl



Case Study 1 *(cont'd)*

Diagnosis From ED

- NSTEMI (will proceed to PCI during hospitalization)

Questions to Consider

- Would you use prasugrel in this case? If so, why would you choose prasugrel instead of clopidogrel?
- How does this patient's history of diabetes affect your choice of prasugrel?
- Would you administer prasugrel prior to the diagnostic angiogram or at the time of PCI?

Please see Important Safety Information, including Boxed Warning, and Full Prescribing Information provided.

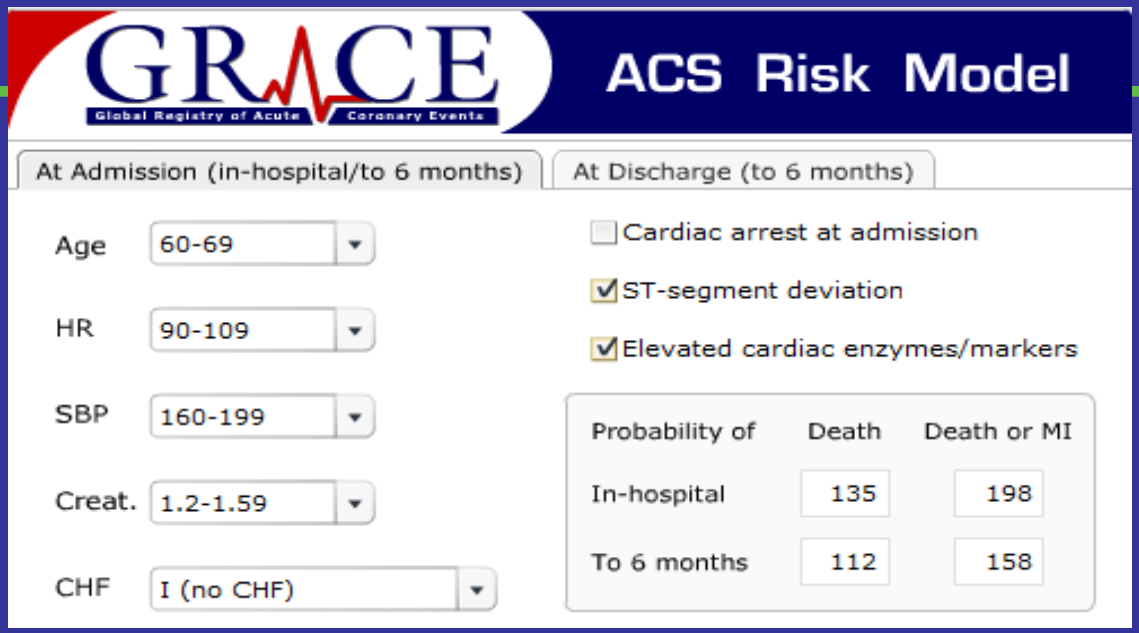


Tabella 5. Mortalità intraospedaliera e a 6 mesi[50] in pazienti a basso, medio ed elevato rischio arruolati nei registri secondo lo score di rischio GRACE.

Categoria di rischio (terzili)	Score di rischio GRACE	Mortalità intraospedaliera (%)
Basso	≤108	<1
Medio	109-140	1-3
Elevato	>140	>3
		Mortalità a 6 mesi post-dimissione (%)
Basso	≤88	<3
Medio	89-118	3-8
Elevato	>118	>8

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Baseline Hematocrit ?	31 - 33.9	Prior Vascular Disease ?	No
GFR: Cockcroft-Gault ?	31 - 60 Calculate GFR	Diabetes Mellitus	Yes
Heart rate on admission	91 - 100	Signs of CHF on admission ?	No
Systolic blood pressure on admission	121 - 180	Sex	Female

Clear Selections

CRUSADE Bleeding Score ?	Risk of In-Hospital Major Bleeding ?
56	14.9%
Very High Risk	

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Case Study 1 *(cont'd)*

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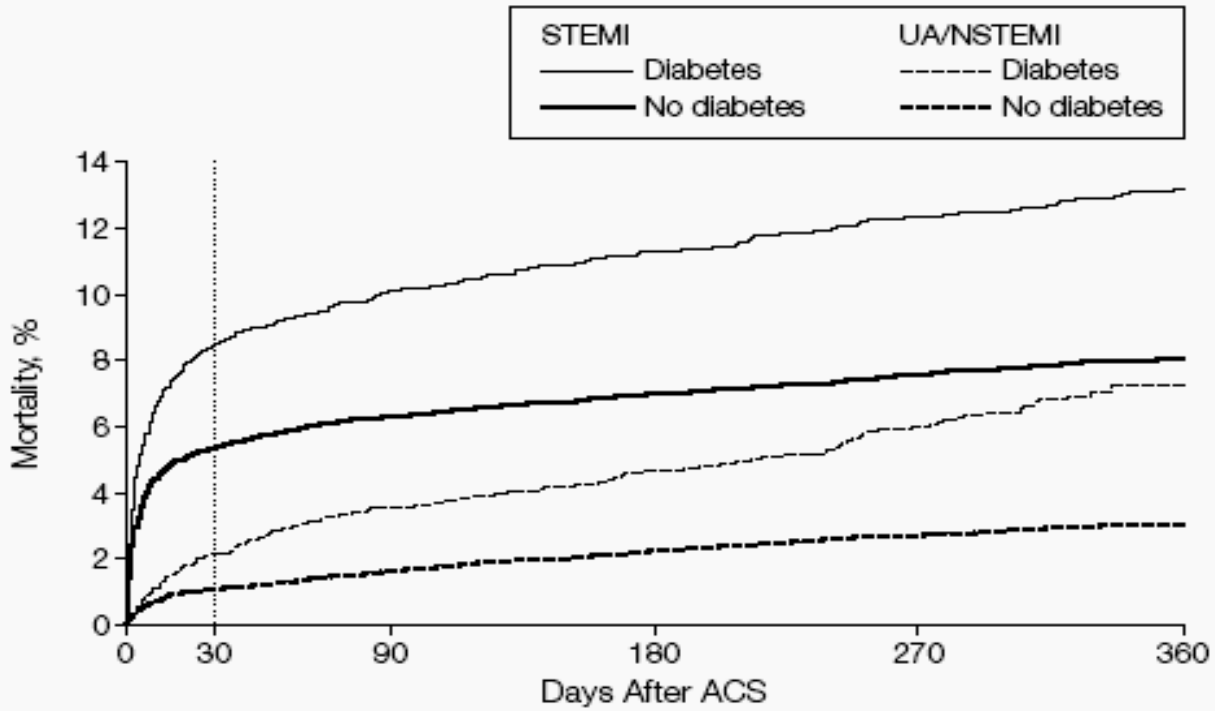
Treatment by ED

- ASA 325 mg; sent to cath lab

Diabetes and Mortality Following ACS

Figure 3. Cumulative Incidence of All-Cause Mortality Through 1 Year After ACS



No. at Risk						
STEMI						
Diabetes	7156	6508	2947	2653	2118	1610
No diabetes	39 421	37 136	16 685	15 274	12 276	9351
UA/NSTEMI						
Diabetes	3457	3313	2923	2339	1317	924
No diabetes	12 002	11 658	10 505	8191	5141	4008

JAMA. 2007;298:765-775

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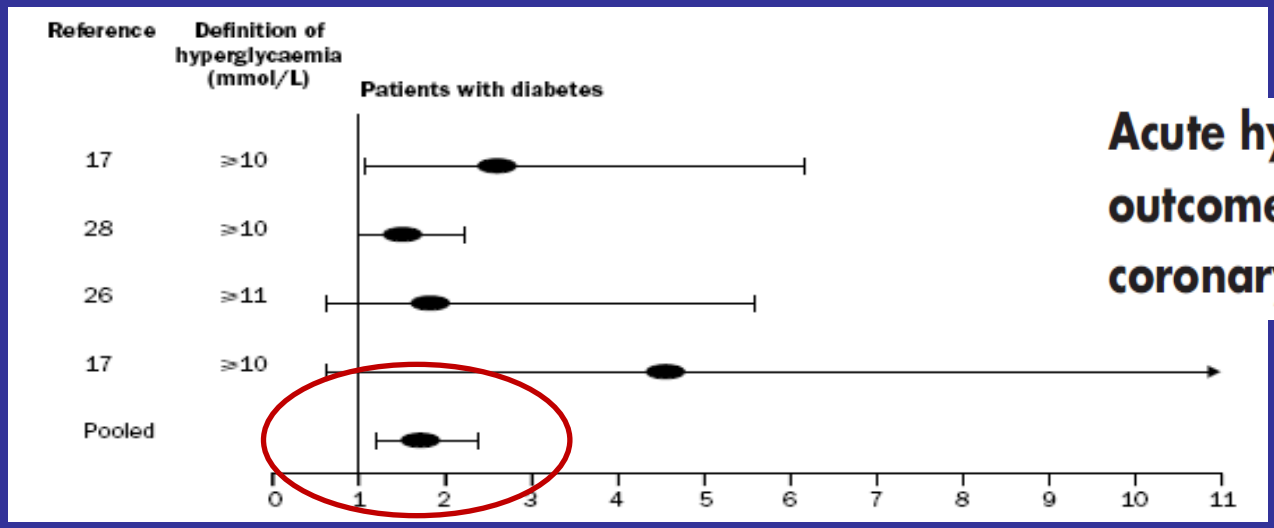
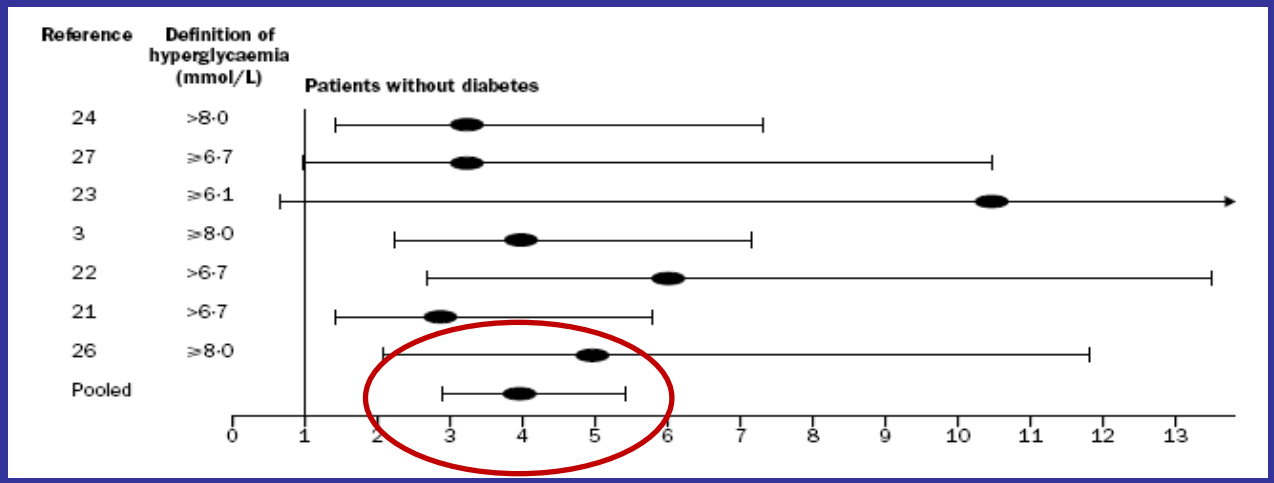
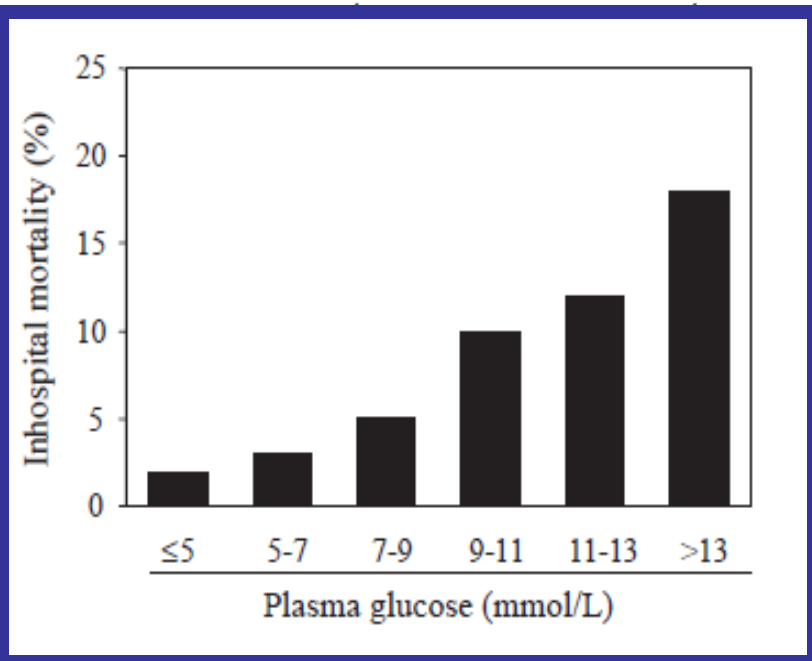
Stress hyperglycaemia and increased risk of death after myocardial infarction in patients with and without diabetes: a systematic overview

Capes, Lancet 2000; 355: 773–78





Acute hyperglycemia is associated with adverse outcome after acute myocardial infarction in the coronary intervention era



Ishihara, Am Heart J 2005;150:814-820

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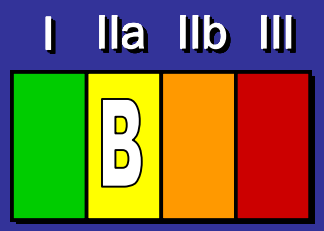
Intensive Glucose Control in STEMI

NEW Recommendation



It is reasonable to use an insulin based regimen to achieve and maintain glucose levels less than 180 mg/dl while avoiding hypoglycemia for patients with STEMI with either a complicated or uncomplicated course

ACC/AHA 2009 STEMI guidelines

Please see Important Safety Information, including Boxed Warning, and Full Prescribing Information provided.

Intensive glucose regulation in hyperglycemic acute coronary syndrome

De Moulder M et al. JAMA Sept 2013

- *294 pazienti con ACS e glicemia tra 140 e 288 mg/dl*
- *Nessuno di essi diabetico insulino-trattato*
- *Trial randomizzato: trattamento intensivo con insulina e.v. per portare la glicemia tra 85 e 110 mg/dl vs trattamento convenzionale*

RISULTATI:
La regolazione intensiva della glicemia non riduce l'estensione dell'area infartuale nei pazienti trattati con PTCI

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In UTIC:
Viene instaurato protocollo infusionale con Insulina (50 UI in 50cc in pompa iniziando da [glicemia/100+1] con controlli ogni 3 ore)
Prosegue infusione 1.5 ml/kg/h per almeno 72 ore

Ecoscopia:
VS di dimensioni normali, acinesia della parete inferiore basale, ipocinesia della parete inferiore media e apicale e della parete anteriore media con EF globale 45%

Picco precoce di cTnT a 12 ore (234 ug/l)

Bilancio idrico mantenuto in pareggio con somministrazione di furosemide 20 mg ev ogni 12 ore.

Ripresa di diuresi attiva spontanea dopo idratazione e normalizzazione di Glicemia e pH.

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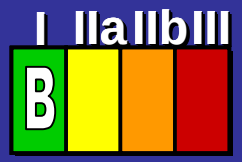
All’arrivo in Cath Lab:
Paziente ancora sintomatico per oppressione, ECG non modificato.
PA 140/70 mmHg
FC 62 RS
SO_2 98 in Reservoire



Somministrati:
Morfina 5 mg ev
Bivalirudina 0,1 mg/kg in bolo e 0,25 mg/kg/ora per infusione per 12 ore

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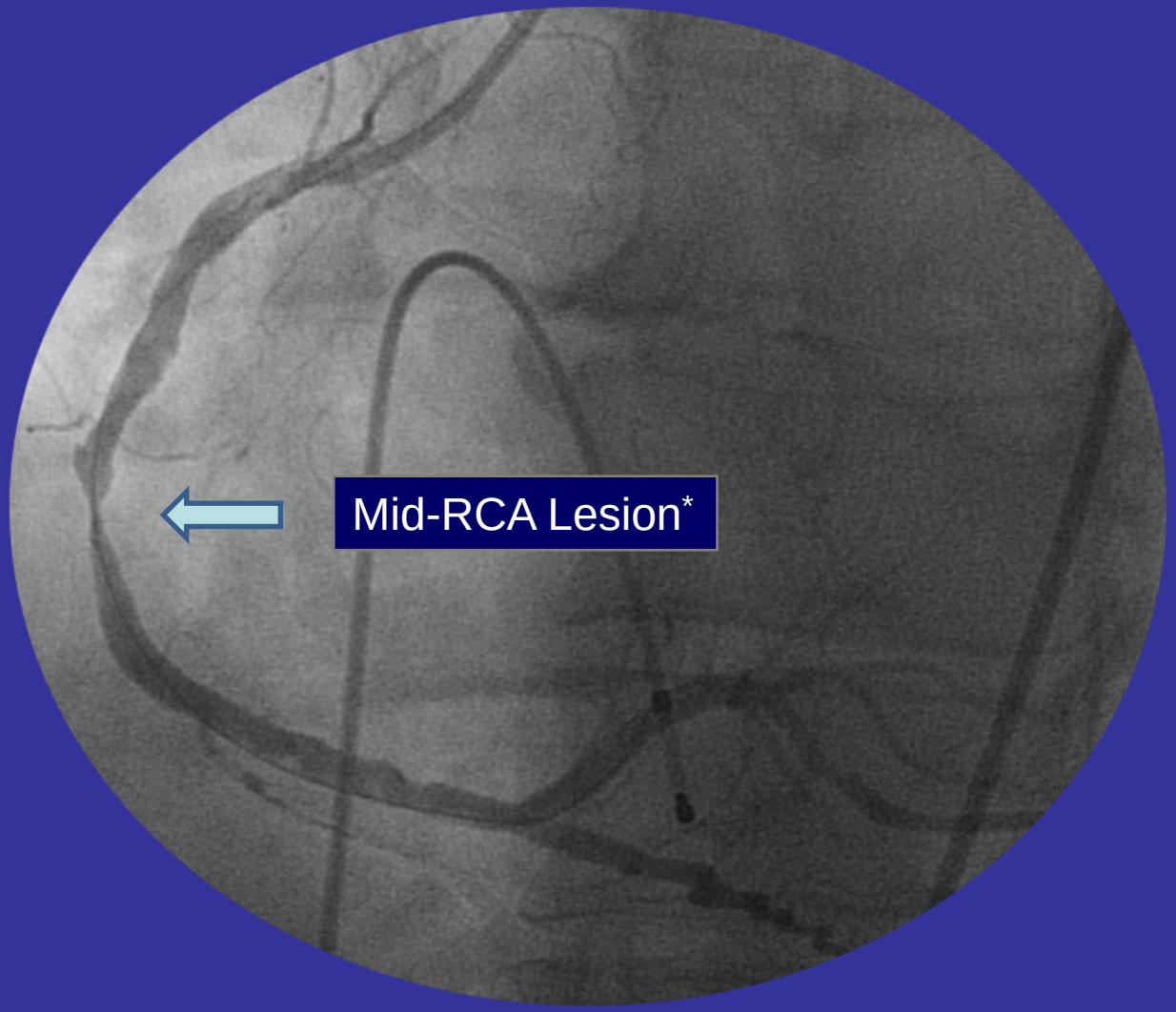
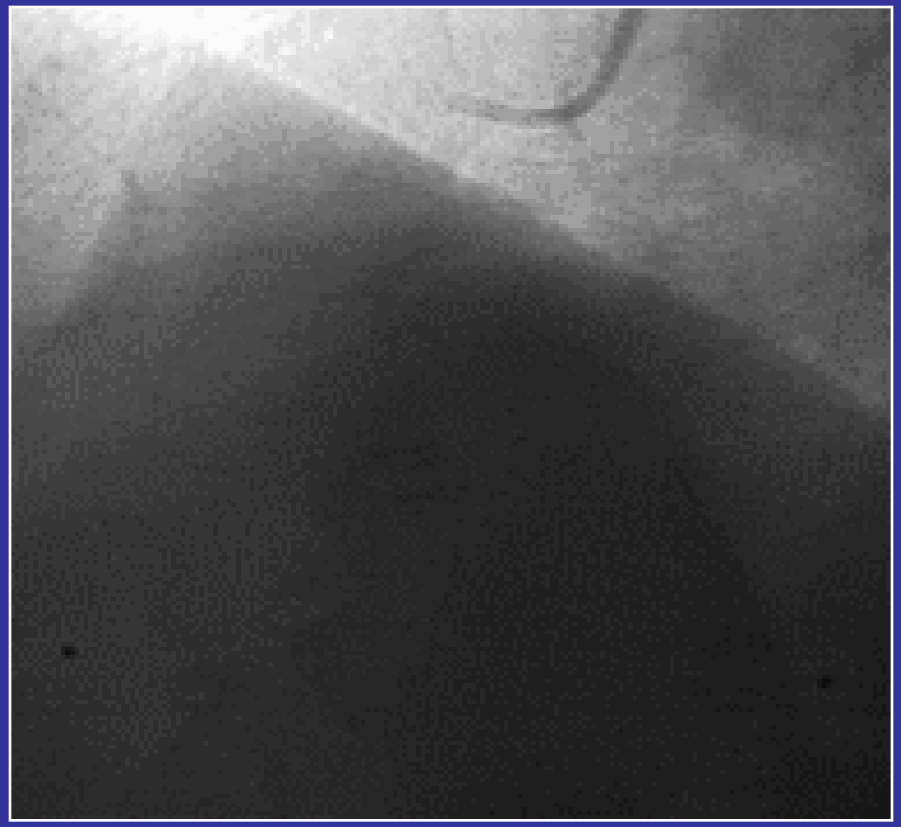
Case Study 1 *(cont'd)*



*Not pictured here: Minimal disease in the left coronary artery.

Case Study 1 *(cont'd)*



Mid-RCA Lesion*

*Not pictured here: Minimal disease in the left coronary artery.

Linee-Guida ESC in collaborazione con EASD su Diabete/preDiabete e Malattie Cardiovascolari: *Rivascolarizzazione Coronarica*

- **Circa 1/4 di tutte le procedure di rivascolarizzazione miocardica sono effettuate in pazienti affetti da DM**

- **Si tratta di procedure difficili per l'interessamento diffuso dei vasi epicardici e la più elevata tendenza a sviluppare re-stenosi dopo PTCI o occulsione del graft safeno dopo chirurgia**

- **Nei diabetici rispetto ai non-diabetici si riscontra un più elevato rischio di complicanze per tutte le procedure interventistiche coronariche ed un più elevato tasso di mortalità tardiva indipendentemente dal tipo di rivascolarizzazione impiegata**

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Linee-Guida ESC in collaborazione con EASD su Diabete/preDiabete e Malattie Cardiovascolari:

Rivascolarizzazione Coronarica

	Grado di Raccomandazione	Livello di Evidenza
Primary PCI is recommended over fibrinolysis in DM patients presenting with STEMI if performed within recommended time limits	I	B
In DM patients subjected to PCI, DES rather than BMS are recommended to reduce risk of target vessel revascularization	I	A
Renal function should be carefully monitored after coronary angiography/PCI in all patients on metformin	I	C
If renal function deteriorates in patients on metformin undergoing coronary angiography/PCI it is recommended to withhold treatment for 48 h or until renal	I	C

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Linee-Guida ESC in collaborazione con EASD su Diabete/preDiabete e Malattie Cardiovascolari:

Rivascolarizzazione Coronarica

	Grado di Raccomandazione	Livello di Evidenza
Optimal medical treatment should be considered as preferred treatment in patients with stable CAD and DM	**IIa**	**B**
CABG is recommended in patients with DM and multivessel or complex CAD to improve survival free from major cardiovascular events	**I**	**A**
PCI for symptom control may be considered as an alternative to CABG in patients with DM and less complex multivessel CAD	**IIb**	**B**

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PTCA
DESCRIZIONE
Accesso arterioso radiale destro 6F. Rimozione dell'introduttore: manuale.

CORONAROGRAFIA
Coronaria sinistra
- Tronco comune: calcifico, indenne da stenosi significative.
- Interventricolare anteriore: irregolarità parietali diffuse, stenosi 80% irregolare e moderatamente calcifica al tratto prossimalemedio, coinvolgente la biforcazione con due rami diagonali di calibro mediocre (Medina 1,1,1) e con il primo settale, stenosi 70% al tratto distale.
- Circonflessa: irregolarità parietali, stenosi 60% del ramo MO3 (esile).
Coronaria destra
-Dominante, occlusione totale al tratto prossimale-medio, periferia opacizzata da collaterali eterocoronarici Rentrop 2.

ANGIOPLASTICA DEL RAMO IVP E DELLA CORONARIA DESTRA CON IMPIANTO DI 3 STENT A RILASCIO DI ZOTAROLIMUS
Catetere guida AL 0.75 6F, pallone 2.5x15mm (predilatazione a 12 ATM tratto prossimale-medio con ripristino di flusso anterogrado ed evidenza di stenosi critca di CD prox-media, CD distale e IVP media. Predilatazioine delle 3 lesioni con 2.5x15. ZES 2.5x18 (IVP 14 ATM); ZES 2.75x18 (16 ATM CD distale), ZES 3.5x22 (14 ATM CD prox-media). Postdilatazione dei 3 stent con palloni NC 2.5x12 (24 ATM IVP) NC 3.0x12 (22 ATM CD dist), NC 3.5x12 (30 ATM CD prox-media).
Buon risultato finale.

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CONCLUSIONI

Coronaropatia trivasale. Effettuata ricanalizzazione della CD con 3 DES. Residuano stenosi critiche di IVA (indicazione a PTCA con tempisitica da valutare) e MO3 (con indicazione a trattamento medico).
Durante la procedura sono stati somministrati:

- Verapamil intra-arterioso 5 mg
- Nitrati intracoronarici
- Mezzo di contrasto (Iomeron) 230 cc

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Dopo la procedura rimangono questioni aperte:

-Trattare solo la culprit anche in presenza di una lesione critica dell'IVA?

- quale timing per il completamento della rivascolarizzazione?

- è praticabile l'opzione chirurgica? Il Syntax Score che dice?

- quale terapia antiaggregante nella fase acuta?
    - IIbIIIa in downstream considerando le lesioni angiografiche?
    - ASA e Ticagrelor sono una soluzione adeguata?

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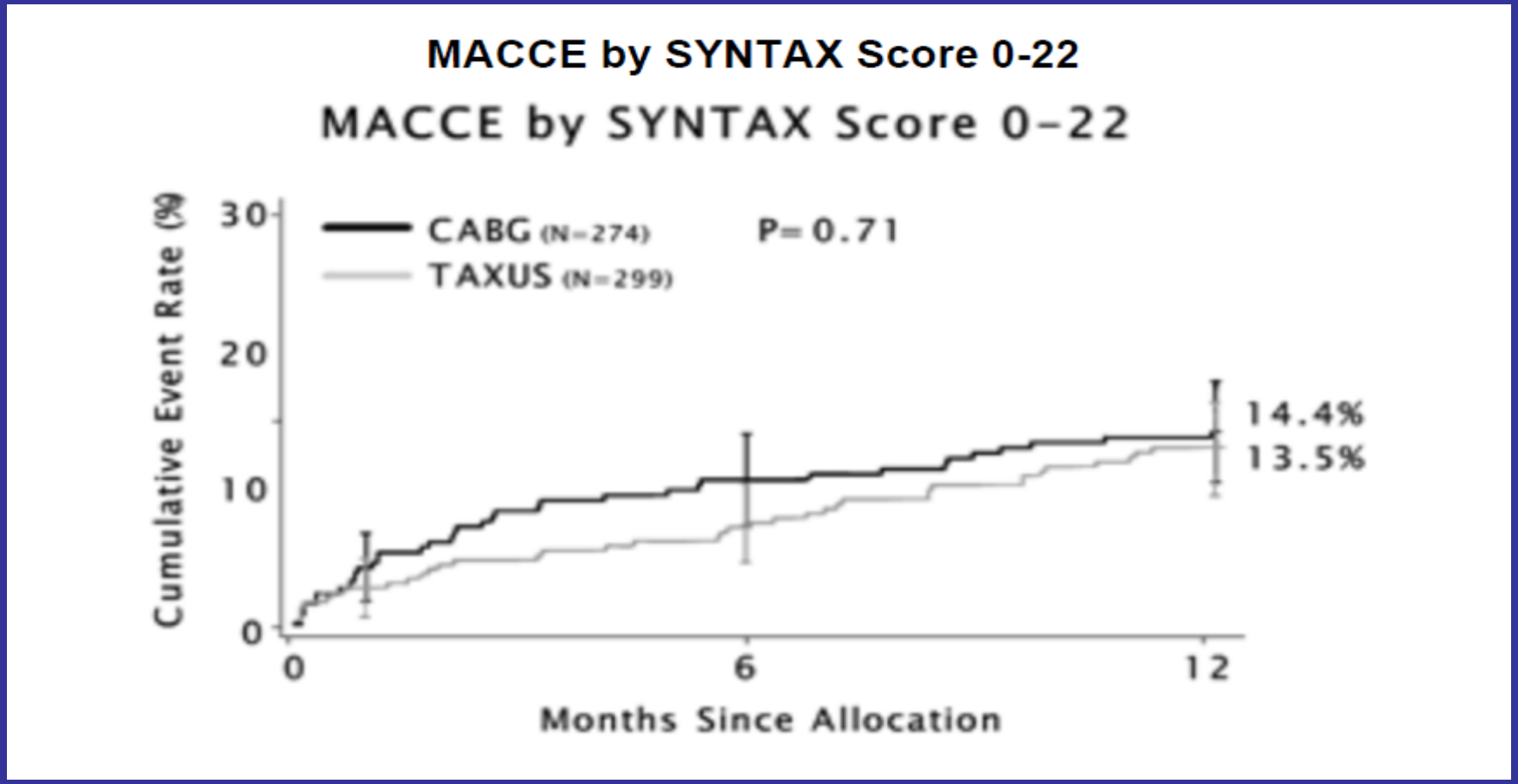
Syntax Score per il paziente in studio



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Case Study 1 *(cont'd)*

Additional Question to Consider

- How long would you maintain dual–antiplatelet therapy?

Table 5 Potential indications for *ad hoc* percutaneous coronary intervention vs. revascularization at an interval

Ad hoc PCI
Haemodynamically unstable patients (including cardiogenic shock).
Culprit lesion in STEMI and NSTE-ACS.
Stable low-risk patients with single or double vessel disease (proximal LAD excluded) and favourable morphology (RCA, non-ostial LCx, mid- or distal LAD).
Non-recurrent restenotic lesions.
Revascularization at an interval
Lesions with high-risk morphology.
Chronic heart failure.
Renal failure (creatinine clearance <60 mL/min), if total contrast volume required >4 mL/kg.
Stable patients with MVD including LAD involvement.
Stable patients with ostial or complex proximal LAD lesion.
Any clinical or angiographic evidence of higher periprocedural risk with *ad hoc* PCI.

Table 4 Multidisciplinary decision pathways, patient informed consent, and timing of intervention

		ACS			Stable MVD	Stable with indication for *ad hoc* PCI[a]
	Shock	STEMI	NSTE-ACS[b]	Other ACS[c]		
Multidisciplinary decision making	Not mandatory.	Not mandatory.	Not required for culprit lesion but required for non-culprit vessel(s).	Required.	Required.	According to predefined protocols.

ESC/EACTS Guidelines on Myocardial Revascularization 2010

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Alla dimissione:

Paziente senza complicanze maggiori
Dimesso in 10 giornata di IMASTE inferiore dopo staged-procedure in coronaropatia multivasale.

Terapia domiciliare:
ASA 100 mg die
Ticagrelor 90 mg bis in die per 12 mesi
Atenololo 25 mg bis in die
Atorvastatina 40 mg die
Ramipril 5 mg die
Insulina HR 6 UI + 8 UI + 5 UI
Lantus 16 UI ore 22

Programmato follow-up cardiologico a 30 giorni
Visita diabetologica ambulatoriale per la ridefinizione della terapia insulinica a 30 giorni

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