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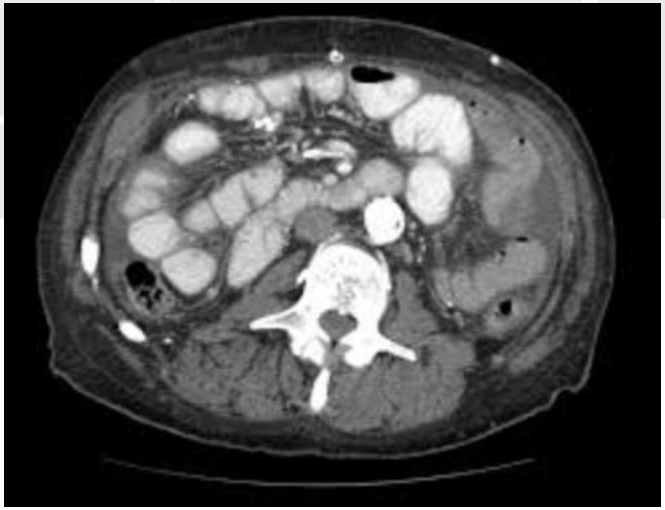
Ischemia Mesenterica Acuta in DEA

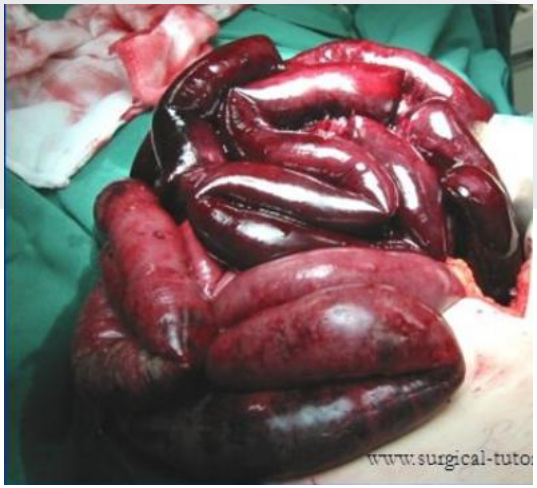
Analisi retrospettiva per lo sviluppo di uno strumento clinico-diagnostico in PS

S. Sartini, V. Di Maio, G. Cremonesi, P. Moscatelli, R. Tallone

DEFINIZIONE

L'ischemia intestinale acuta è una sindrome caratterizzata dall'apporto di un **inadeguato flusso ematico dei vasi mesenterici**, causando **ischemia** ed eventualmente **gangrena** della parete intestinali





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Dimensione del problema

Incidence of Acute Thrombo-Embolic occlusion of the Superior Mesenteric Artery.
A population Based Study

- Overall autoptic findings → 6,9/1000

- Overall incidence per year → 21/100000 < 80 y

-Women/Men 2:1

Mortality Rates

71%for Arterial Embolism
87% for Arterial Thrombosis
44% for Venous Thrombosis
80% for Non-Occlusive Ischaemia

Acosta S et al. Eur j Vasc. Endovasc. Surgery
Vol 27, February 2004

Dimensione del problema

Acute Mesenteric Ischemia: a Vascular Emergency

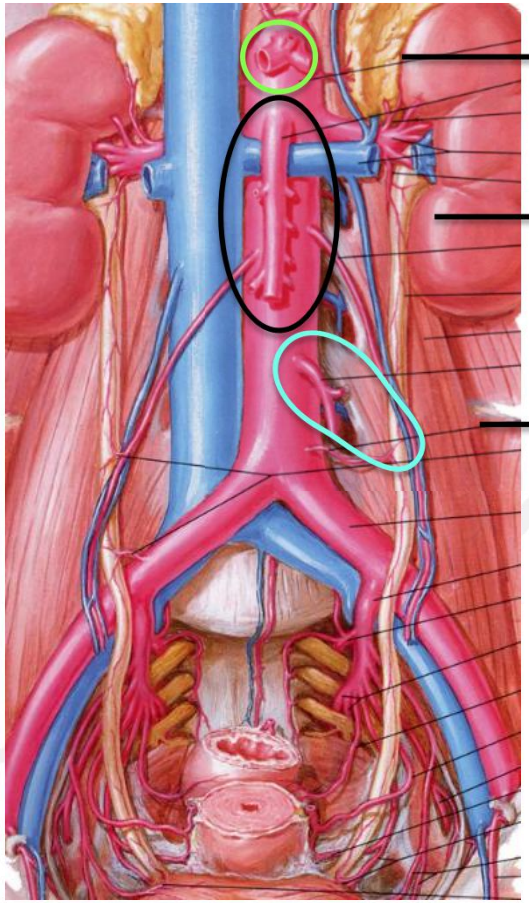
Patologia Tempo dipendente

> 6 h	6-12 h	24 h

ischemia irreversibile

Klar E. et al. Dtsch Arztebl Int 2012; 109(14): 249-256

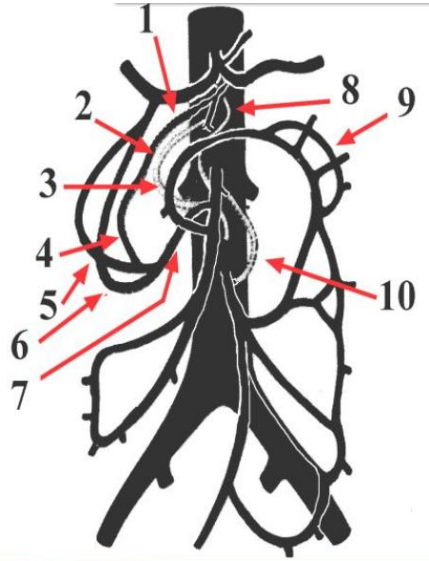
Accenni Anatomici



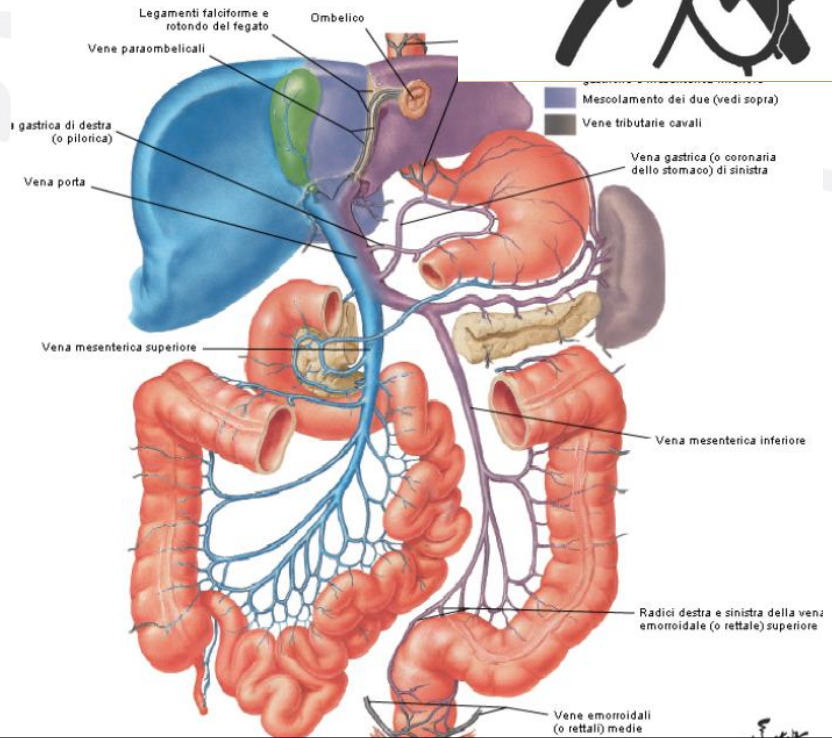
Tronco celiaco

Mesenterica Superiore

Mesenterica Inferiore



1 – arteria pancreatica dorsale;
2 – arcata di Kirk
3 – arcata di Riolano;
4 – arcata pancreaticoduodenale posteriore;
5 – arcata pancreatico duodenale superiore;
6 – arcata di Rio Branco;
7 – arcata di Buhler;
8 – arcata di Drumond;
9 – tronco duodenopancreatico inferiore;
10 – arcata di Villemin.



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Cenni di Fisiopatologia

Occlusione Arteriosa trombotica	**Occlusione Arteriosa embolica**

OMI

Ischemia non occlusiva	**Ischemia delle vene splancniche**

NOMI

Presentazione Clinica

Occlusione Arteriosa trombotica	Occlusione Arteriosa embolica

OMI

- Dolore addominale improvviso e violento/vomito/diarrea
- Quadro clinico discrepante con obiettività addominale
- Anamnesi di claudicato abdominis o fonti cardioemboliche

Cenni di Fisiopatologia

Ischemia non occlusiva	Ischemia delle vene splancniche

NOMI

- Dolore addominale ad esordio più graduale/stipsi/diarrea
- Peggioramento delle condizioni cliniche da causa ignota
- Stato settico da causa ignota

>4 AUC 0,618 97.8% and 91.8% of sensitivity and specificity respectively

World J Surg (2017) 41:1966–1974

Table 3 Multivariate predictors of AMI and development of the clinical score

Variable	Logistic regression coefficients	Adjusted OR (95% CI)
WBC		
≤19.6 × 10^9/L	2.78	16.11
>19.6 × 10^9/L		(1.10, 235.34)
RDW		
≤15%	3.32	27.65
>15%		(1.53, 501.02)
MPV		
≤9.3 fL	2.78	16.06
>9.3 fL		(1.48, 174.50)
D-dimer		
≤693 ng/mL	3.76	42.91
>693 ng/mL		(2.56, 718.09)

WBC white blood cell, *PLT* platelet, *RDW* red cell distribution width, *MPV* mean platelet volume, *OR* Oc

WBC
- ≤19.6 × 10^9/L
- >19.6 × 10^9/L

RDW
- ≤15%
- >15%

MPV
- ≤9.3 fL
- >9.3 fL

D-dimer
- ≤693 ng/mL
- >693 ng/mL

Wang Z, Chen JQ, Liu J, Tian L. A Novel Scoring System for Diagnosing Acute Mesenteric Ischemia in the Emergency Ward. World J Surg (2017) 41:1966–1974

Scopo del nostro studio

Early diagnosis and treatment are the key points to reduce mortality of AMI. **Ab**

however “clinical suspicious” remains the most important feature to drive the diag

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Acute Mesenteric Ischaemia in the emergency department: a retrospective analysis to develop a clinical diagnostic tool and prospective validation supported by duplex ultrasound
S.Sartini, V. Di Maio, G. Cremonesi, P. Moscatelli, R. Tallone

SOCIETÀ ITALIANA MEDICINA D'EMERGENZA-URGENZA · SIMEU ·

Scopo del nostro studio

Primary end point:

-Create a clinical diagnostic tool for the evaluation of pre-test probability of AMI in

-Validate the Wang et al. novel scoring system for AMI

Materiali e Metodi

CHI? → Pz tra Gennaio 2014 e Dicembre 2015

↓

CARATTERISTICHE

↓

Dolore Addominale di ndd sottoposto ad RX e angio-TC

↓

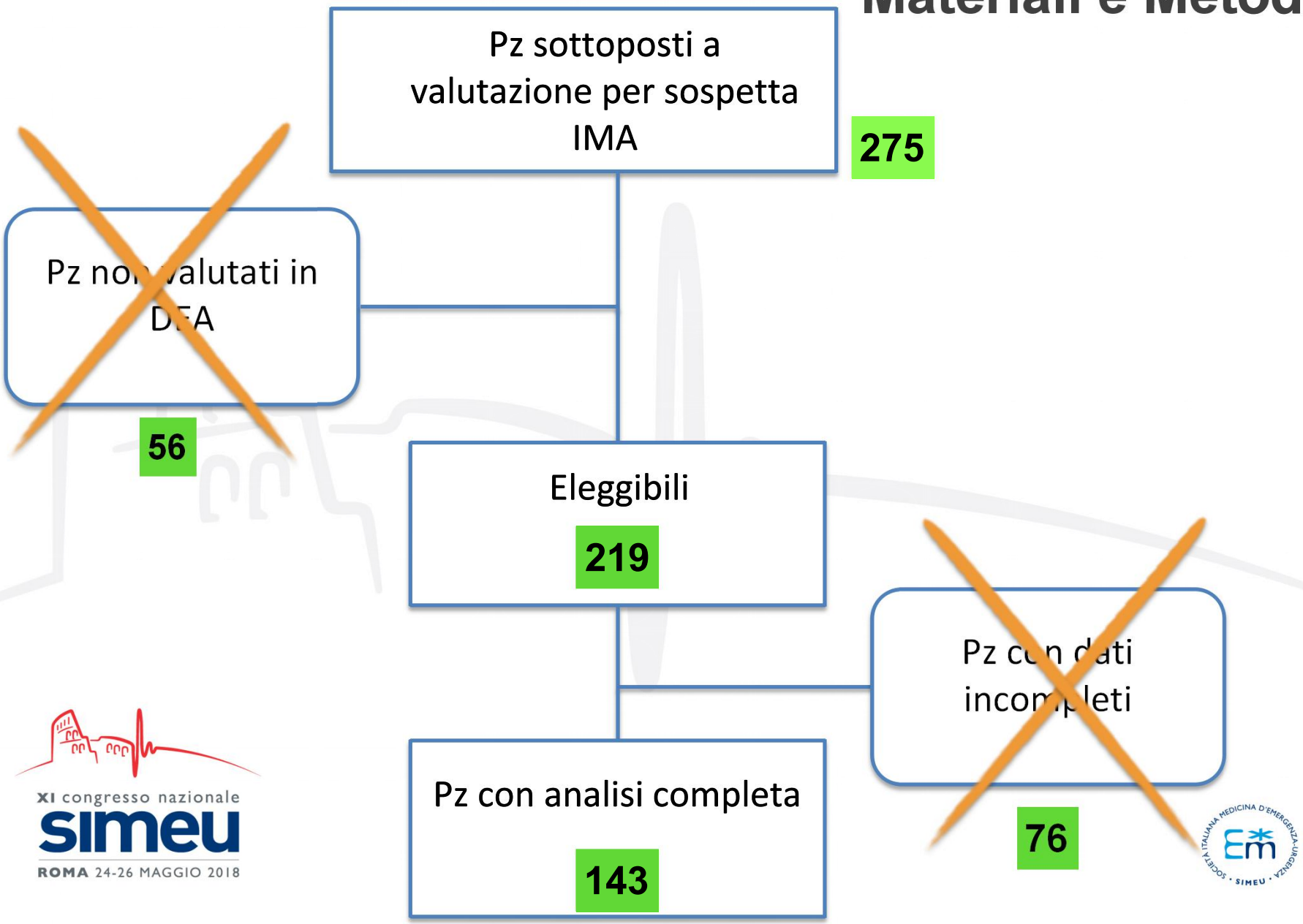
Comorbilità/Obiettività	Param ed es. Lab	Farmaci

→ IMA

↓

Produzione di SCORE diagnostico

Materiali e Metodi



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Caratteristiche pazienti considerati

TABLES 1. Characteristics of patients investigated for AMI

	Non-AMI (n=53)	AMI(n=90)	OMI (n=15)	NOMI(n=29)	MVT(n=46)
Age	73,75±14,5	71,56±14,6	74,27±12,9	81,38±12,7	65,48±13
Female	27(18,9%)	47(32,9%)	9(6,3%)	19(13,3%)	19(13,3%)
Risk Factors					
Smoke	6(4,6%)	14(9,8%)	1(0,7%)	3(2,1%)	10(7%)
High cholesterol	13(9,1%)	24(16,8%)	9(6,3%)	9(6,3%)	6(4,2%)
High blood pressure	26(18,2)	52(36,4%)	11(7,7%)	21(14,1%)	20(14%)
Diabetes	6(4,2%)	13(9,1%)	4(2,8%)	5(3,5%)	4(2,8%)
Family history	4(2,8)	5(5,3%)	3(2,1)	1(0,7%)	1(0,7%)
Comorbidity					
CAD	12(8,4%)	16(11,2%)	5(3,5%)	10(7%)	1(0,7%)
Cerebral vasculopaty	1(0,7%)	15(10,6%)	3(2,1%)	10(7%)	2(1,4%)
Carotid atherosclerosis	0(0%)	5(3,5%)	0	2(1,4%)	3(2,1%)
Peripheral artery disease	3,(2,1%)	9(6,3%)	3(2,1%)	5(3,5%)	1(0,7%)
Atrial fibrillation	4(2,8%)	15(10,5%)	4(2,8%)	8(5,6%)	3,(2,1%)
AAA	1(0,7%)	4(2,8%)	1(0,7%)	2(1,4%)	1(0,7%)
Chronic liver disease	7(4,9%)	32(22,4%)	1(0,7%)	0	31(21,7%)

Caratteristiche pazienti considerati

Medications					
Digoxin	1(0,7%)	4(2,8%	0	4(2,8%)	0
b-blocker	14(9,8%)	30(21%)	11(7,7%)	13(9,1%)	6(4,2%)
Ca-antagonist	7(4,9%)	8(5,6%)	3(2,1%)	4(2,8%)	1(0,7%)
Signs and symptoms					
Acute abdominal pain(<24h)	34(23,8%)	55(38,5%)	9(6,3%)	17(11,9%)	29(20,3%)
Abdominal pain >48h	2(1,4%)	10(7%)	1(0,7%)	2(1,4%)	7(4,9%)
others	17(11,9%)	14(9,8%)			
Vitals Parameter					
SBP	132,31±28,3	133,8±30	140,71±35,4	139,44±32,3	126,58±24,8
DBP	77,04±13,3	77,3±15,7	79,43±19,1	78,7±18,1	74,8±12,1
Temperature	37,2±0,7	36,9±0,6	37±0,3	36,6±0,7	37,1±0,4
Heart rate	81,6±15,2	99,1±25,3	97,4±31,2	98,3±22,5	89,7±15,3
Laboratory					
Leucocytes	9,94±2,6	11,3±4,9	10,07±3,4	14,5±3,1	9,6±5,6
Neutrophyl	71,6±16,4	78,4±12,9	77±12,5	78,8±9,7	68,1±14
D-dimer	334,5±77,07	405±87	430±14,5	382,7±105,1	490±98
Hospital LOS	20,06±31,2	17,7±32	15,57±18,7	14,3±20,2	20,23±41
Adverse outcome	12(8,5%)	19(13,4%)	4(2,8%)	11(7,7%)	4(2,8%)
Death	14(9,9%)	24(16,9%)	7(4,9%)	14(9,9%)	3(2,1%)

AMI: Acute Mesenteric Ischemia, OMI: Occlusive Mesenteric Ischemia, NOMI: Non Occlusive Mesenteric Ischemia, MVT: Mesenteric Venous Thrombosis, CAD: Coronary Artery Disease, AAA: Abdominal aortic aneurysm, SBP: Systolic Blood Pressure, DBP: Diastolic blood pressure,

Risultati

OMI/NOMI Mortality index	**50%**
MVT Mortality index	**11.6%**

…What about Wang's score???

1) we could considered only **77 patients**. Our central lab stopped MPV value for emer

2) ROC analysis for AMI score— AUC 0,618 with 76,5% sensibility and 51,2% specificity

Risultati

Table 2. Factors significantly associated with AMI at multivariate logistic regression

	B	S.E.	Wald	Exp(B)	95% CI per EXP(B)	
					Inferiore	Superiore
One RISK FACTOR	0,055	0,24	0,052	1,056	0,661	1,689
Cumulative Comorbidity	1,191	0,403	8,727	3,29	1,493	7,251
ABdominal pain "out of proportion" to clinical signs with onset <24h	1,27	1,31	0,939	3,581	0,271	47,239
SBP	0,001	0,008	0,006	1,001	0,985	1,017
HR	-0,002	0,015	0,022	0,998	0,969	1,027
Neutrophils_Perc	0,019	0,021	0,856	1,019	0,979	1,062

Risultati

- Factors significantly associated only with OMIorNOMI at multivariate logistic regression

	B	S.E.	Wald	Exp(B)	95% CI per EXP(B)	
					Inferiore	Superiore
Age65	1,118	0,603	3,439	3,059	0,938	9,969
Medications (digoxin or beta-blocker-or Ca-antagonist	0,36	0,465	0,622	1,30	0,58	3,59

Risultati

- Factors significantly associated only with MVT at multivariate logistic regression

	B	S.E.	Wald	Exp(B)	95% CI per EXP(B)	
					Inferiore	Superiore
COMORBODITY_Chronic liver disease	2,196	1,223	3,225	8,991	0,818	98,818
ABdominal pain >48h	0,99	1,45	0,948	1,19	0,57	5,98

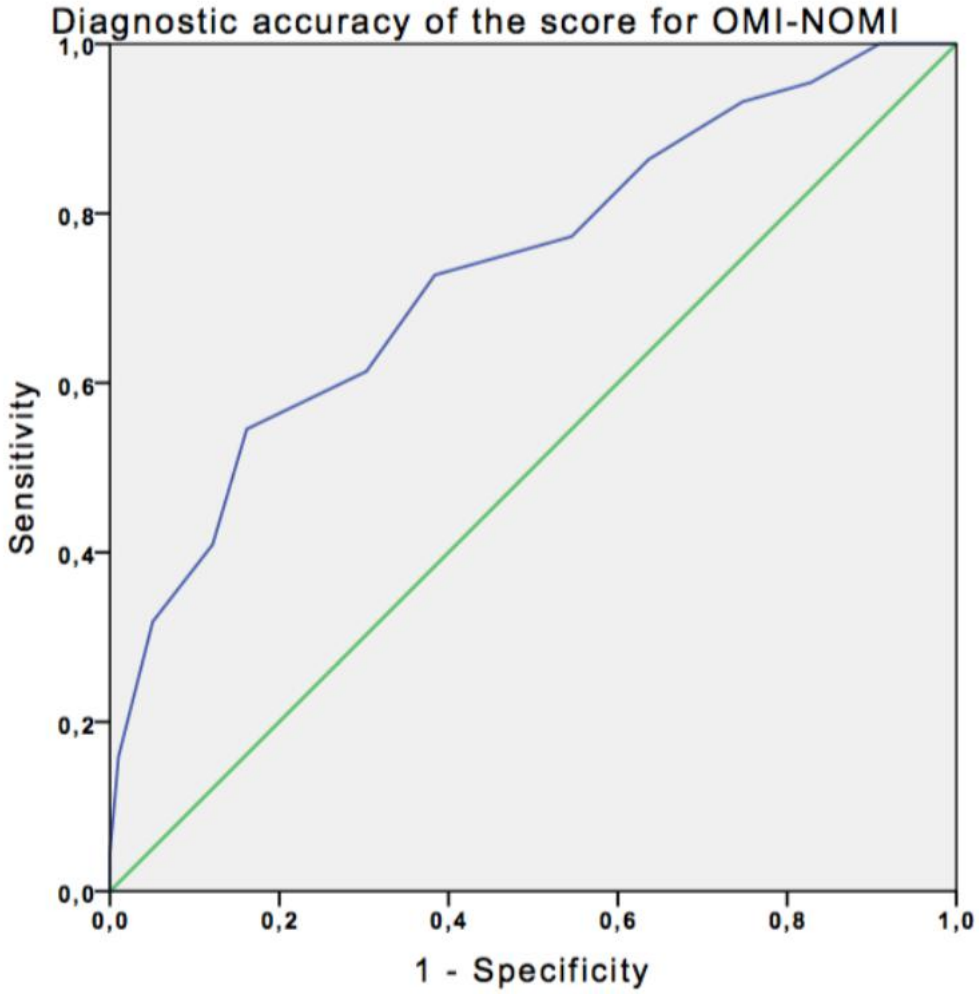
AMI SCORE

	AMI	To be ADDED querying OMI or NOMI	To be added querying MVT
One CV risk factor	2 point		
Cumulative comorbidity	1 point each		
Abdominal pain out of proportion to clinical signs	4 points		
Altered systolic blood pressure (<90 or >140)	1 point		
Altered heart rate (<60 or>100 bpm)	1 point		
Neutrophils percentage>75	1 point		
Age >65yo		4 points	
Assumption of one of the following medication(Digoxin, beta-blocker or Ca-antagonist)		2 points	
Chronic liver disease			4 points
Abdominal pain onset >48h			3 points

CV risk factors: smoke, hypercholesterolemia, arterial hypertension diabetes mellitus, family history for cardiovascular disease

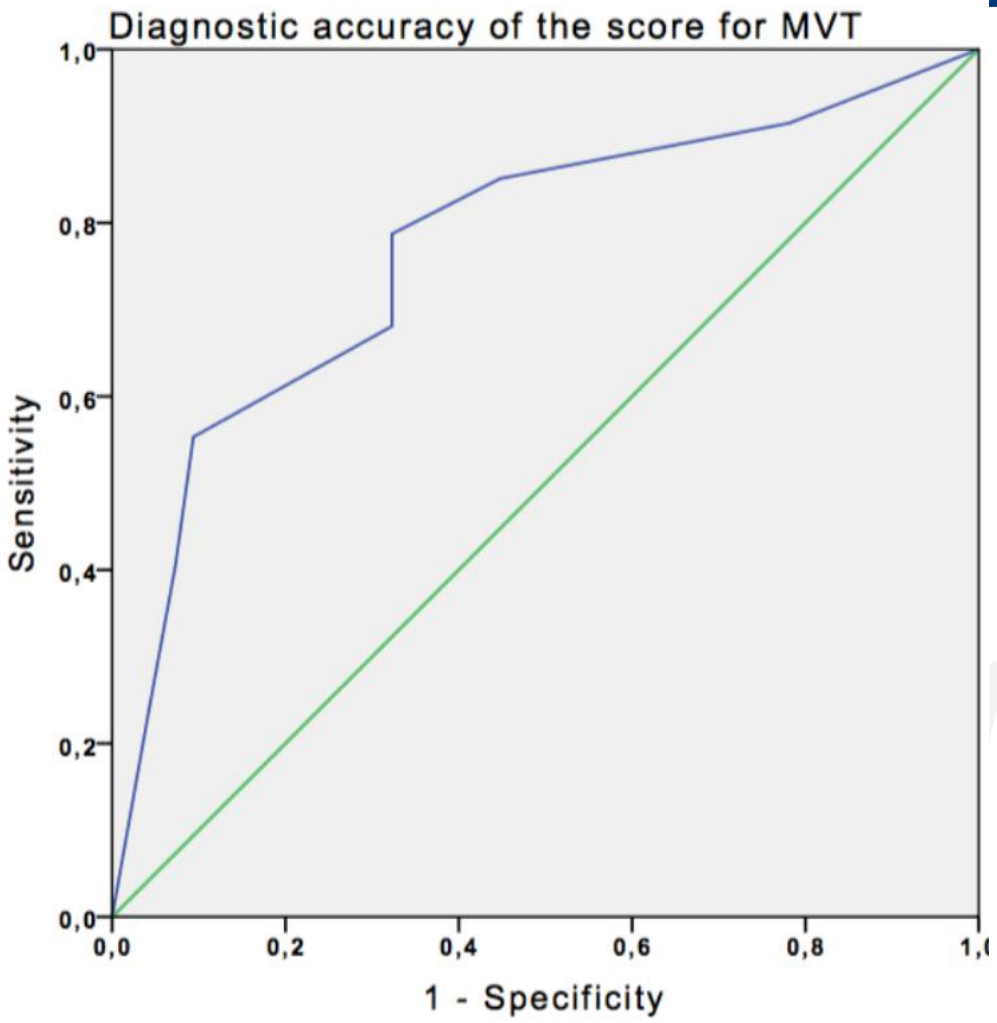
Comorbidity considered: coronary artery disease, cerebral vasculopathy, carotid atherosclerosis, peripheral arterial occlusive disease, aortic aneurism, atrial fibrillation,

OMI-NOMI



AUC 0,733 (CI 95% 0,620,82)—
91.2% sensibilità
47.2 specificità

MVT



AUC 0,772 (CI 95% 0,686-0,859)—
88% sensibilità
56% specificità

Conclusioni

Perché ho fatto cambio turno???

tutti stasera!

devo rivedere il

devo ch consule quel pz!

HURRY UP!

Conclusioni

-ANGIO-TC ADDOME- Gold Standard

-**AMI SCORE**: Score di supporto al sospetto clinico in addominalgie di n.d

-Considerando le variabili oggetto dello score potrebbe essere facilmente a


GRAZIE PER L'ATTENZIONE
mergency