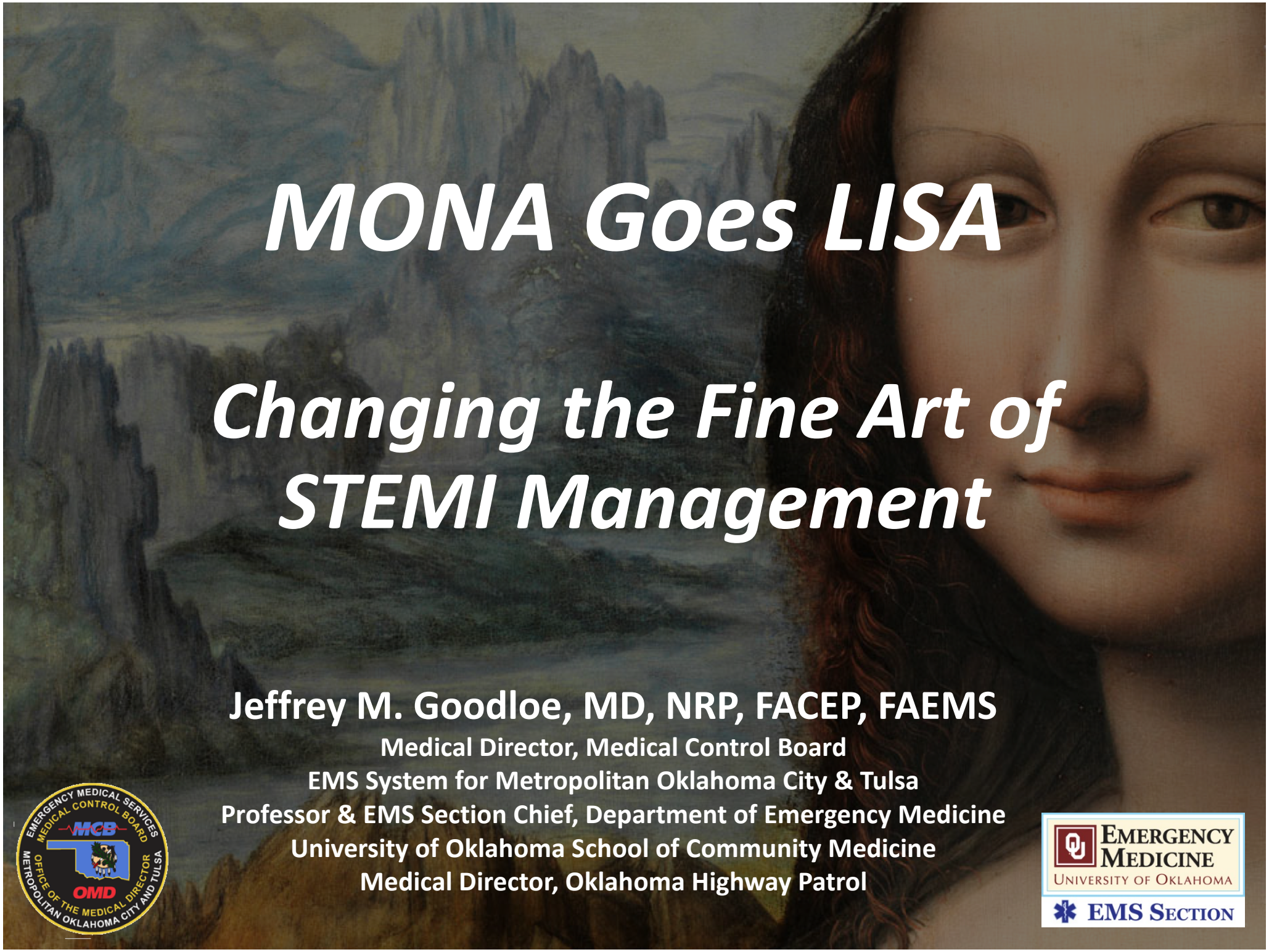


MONA Goes LISA

Changing the Fine Art of STEMI Management

Jeffrey M. Goodloe, MD, NRP, FACEP, FAEMS

Medical Director, Medical Control Board

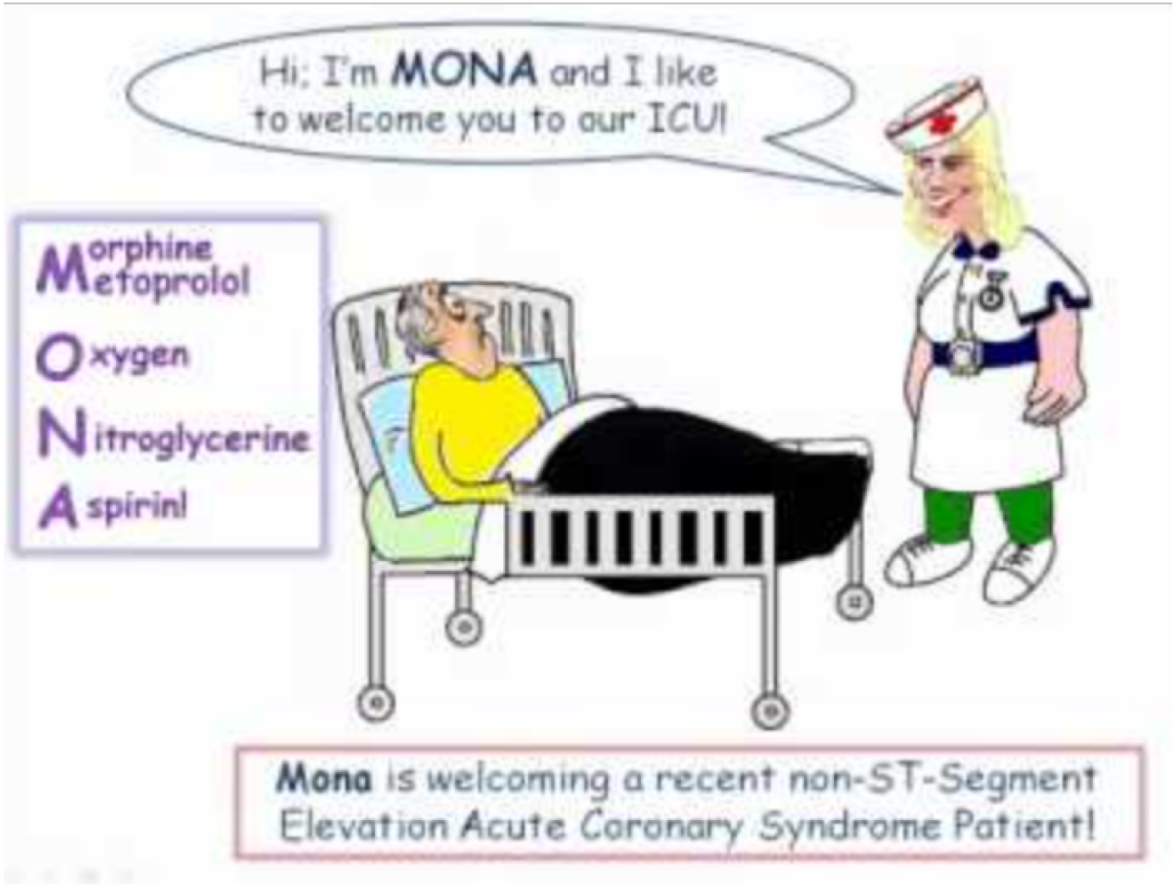
EMS System for Metropolitan Oklahoma City & Tulsa

Professor & EMS Section Chief, Department of Emergency Medicine

University of Oklahoma School of Community Medicine

Medical Director, Oklahoma Highway Patrol

What's the problem with MONA?



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EMERGENCY MEDICINE UNIVERSITY OF OKLAHOMA

EMS SECTION

Morphine

Oxygen

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Oxygen Therapy in Suspected Acute Myocardial Infarction

Robin Hofmann, M.D., Stefan K. James, M.D., Ph.D., Tomas Jernberg, M.D., Ph.D., Bertil Lindahl, M.D., Ph.D., David Erlinge, M.D., Ph.D., Nils Witt, M.D., Ph.D., Gabriel Arefalk, M.D., Mats Frick, M.D., Ph.D., Joakim Alfredsson, M.D., Ph.D., Lennart Nilsson, M.D., Ph.D., Annica Ravn-Fischer, M.D., Ph.D., Elmir Omerovic, M.D., Ph.D., Thomas Kellerth, M.D., David Sparv, B.Sc., Ulf Ekelund, M.D., Ph.D., Rickard Linder, M.D., Ph.D., Mattias Ekström, M.D., Ph.D., Jörg Lauermann, M.D., Urban Haaga, B.Sc., John Pernow, M.D., Ph.D., Ollie Östlund, Ph.D., Johan Herlitz, M.D., Ph.D., and Leif Svensson, M.D., Ph.D., for the DETO2X–SWEDEHEART Investigators*

Hofmann R, et al. NEJM 377;13 (Sept 28, 2017)

Oxygen

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

CONCLUSIONS Routine use of supplemental oxygen in patients with suspected myocardial infarction who did not have hypoxemia was not found to reduce 1-year all-cause mortality.

Lennart Nilsson, M.D., Ph.D., Annica Ravn-Fischer, M.D., Ph.D.,
Elmir Omerovic, M.D., Ph.D., Thomas Kellerth, M.D., David Sparv, B.Sc.,
Ulf Ekelund, M.D., Ph.D., Rickard Linder, M.D., Ph.D.,
Mattias Ekström, M.D., Ph.D., Jörg Lauermann, M.D., Urban Haaga, B.Sc.,
John Pernow, M.D., Ph.D., Ollie Östlund, Ph.D., Johan Herlitz, M.D., Ph.D.,
and Leif Svensson, M.D., Ph.D., for the DETO2X–SWEDEHEART Investigators*

Hofmann R, et al. NEJM 377;13 (Sept 28, 2017)

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Oxygen

Effect of supplemental oxygen exposure on myocardial injury in ST-elevation myocardial infarction

Ziad Nehme[1, 2], Dion Stub[2, 3, 4, 5], Stephen Bernard[1, 2, 3], Michael Stephenson[1], Janet E Bray[2, 3], Peter Cameron[2, 3], Ian T Meredith[6], Bill Barger[1], Andris H Ellims[3, 4], Andrew J Taylor[3, 4], David M Kaye[2, 3, 4], Karen Smith[1, 2, 7] for the AVOID Investigators

Author affiliations +

Abstract

Objective Supplemental oxygen therapy may increase myocardial injury following ST-elevation myocardial infarction (STEMI). In this study, we aimed to evaluate the effect of the dose and duration of oxygen exposure on myocardial injury after STEMI.

Nehme Z et al. Heart. 2016 Mar;102(6):444-51

Results of the AVOID Trial

- Every 100 L increase in oxygen exposure in the first 12 h was associated with a 1.4% (95% CI 0.6% to 2.2%, p<0.001) and 1.2% (95% CI 0.7% to 1.8%, p<0.001) increase in the mean peak cTnI and CK, respectively.
- The median supplemental oxygen exposure of 1746 L would result in a 21% (95% CI 3% to 37%) increase in infarct size according to the cTnI profile.

Nehme Z et al. Heart. 2016 Mar;102(6):444-51

Results of the AVOID Trial

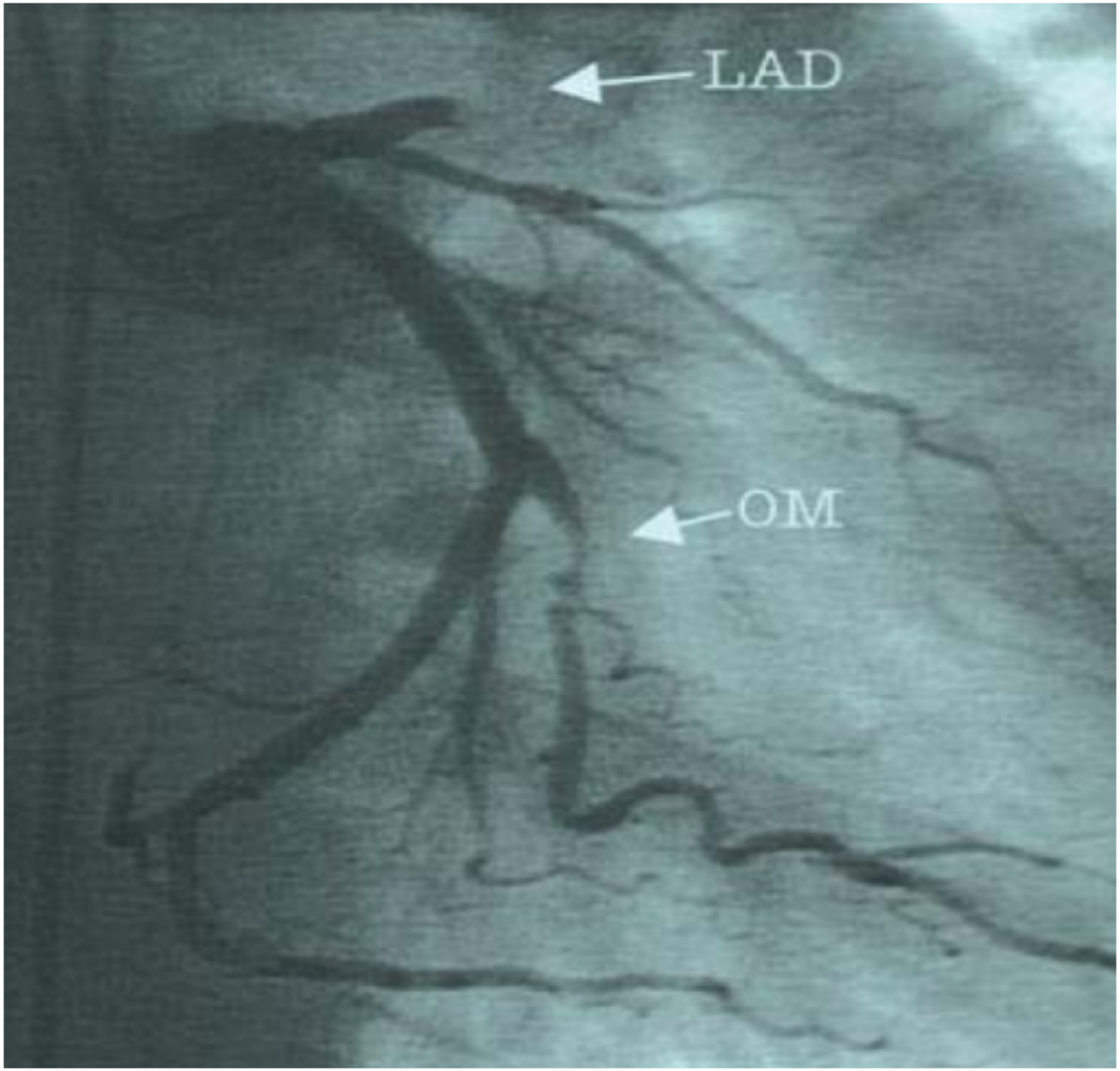
- Every 100 L increase in oxygen exposure in the first 12 h was associated with a 1.4% (95% CI 0.6% to 2.2%, p<0.001) and 1.2% (95% CI 0.7%

CONCLUSIONS Supplemental oxygen exposure in the first 12 h after STEMI was associated with a clinically significant increase in cTnI and CK release.

- The median supplemental oxygen exposure of 1746 L would result in a 21% (95% CI 3% to 37%) increase in infarct size according to the cTnI profile.

Nehme Z et al. Heart. 2016 Mar;102(6):444-51

A word about nitroglycerin



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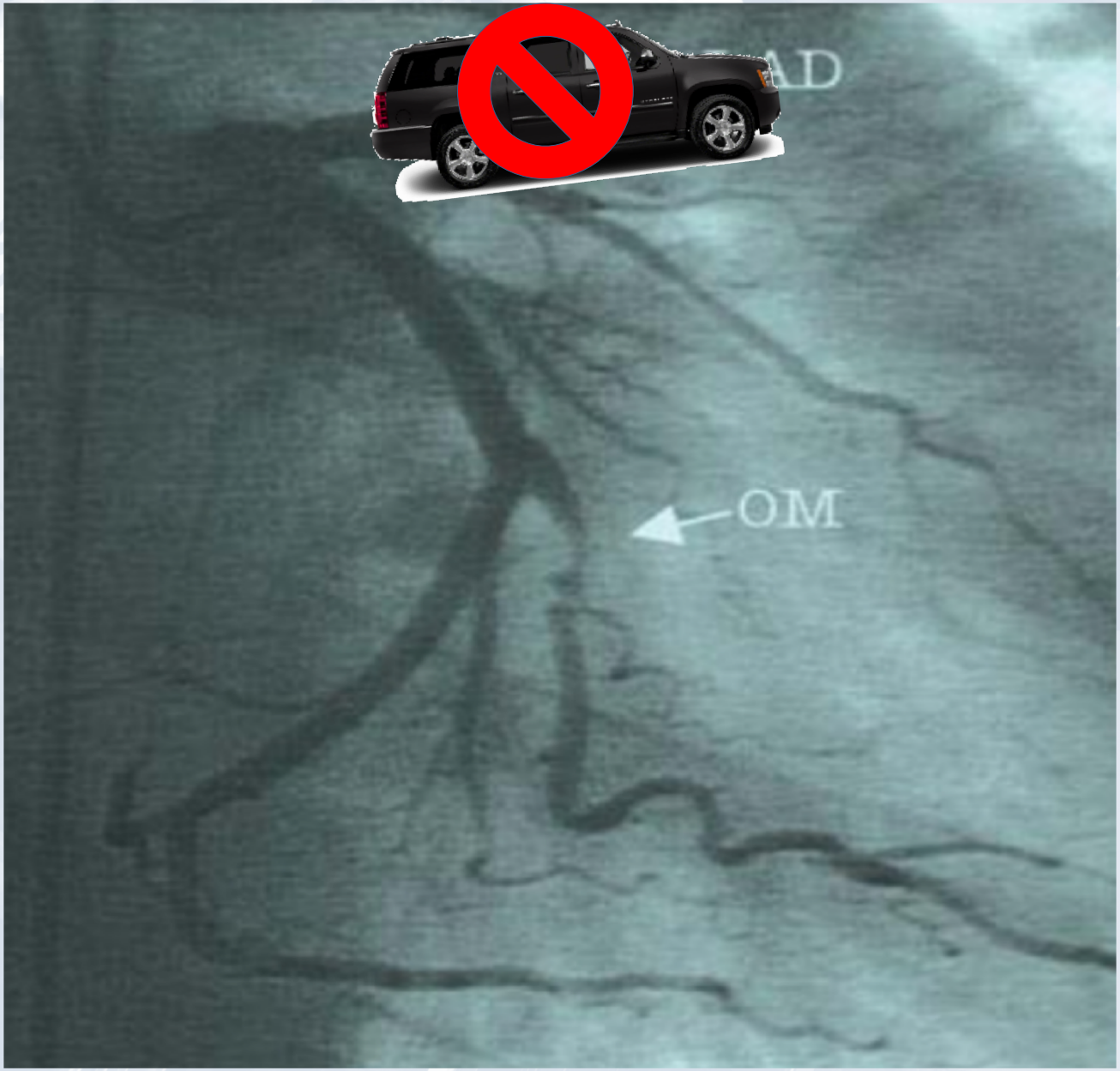
A word about nitroglycerin



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EMS SECTION

Aspirin

CARDIOLOGY

Coronary Care

Outcome of Myocardial Infarction in Patients Treated with Aspirin Is Enhanced by Pre-Hospital Administration

Barbash I.M.[a] · Freimark D.[a] · Gottlieb S.[a] · Hod H.[a] · Hasin Y.[a] · Battler A.[b] · Crystal E.[a] · Matetzky S.[a] · Boyko V.[a] · Mandelzweig L.[a] · Behar S.[a] · Leor J.[a]

Barbash IM et al. Cardiology 2002; 98(3):141-7

Pre-Hospital Aspirin

- Independent determinant of survival
- 7 day survival (OR 0.43; 95% CI 0.18–0.92)
- 30 day survival (OR 0.60; 95% CI 0.32–1.08).
- Benefit even if NOT treated with reperfusion

Aspirin in acute STEMI saves lives. Give it.

Barbash IM et al. Cardiology 2002; 98(3):141-7

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Position 4 (P4) Scene Coordination
Always outside ACS "triangle"

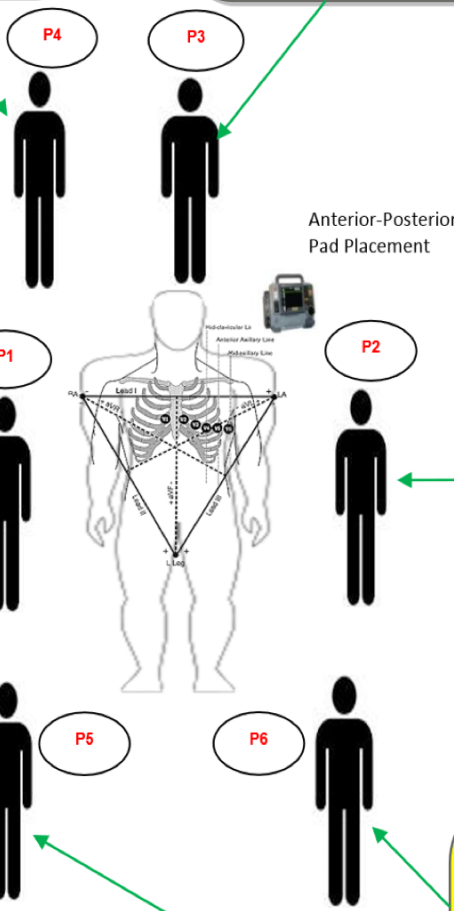
- Monitors time intervals of interventions and time from first medical contact
- Avoids direct patient care to maintain supervisory duties if greater than four rescuers throughout.
- Directs "staging" of personnel beyond six rescuers away from immediate treatment area to prevent crowding.
- Assumes duties of P5/P6 if limited to four rescuers throughout (if paramedic) and positions self in P5 or P6 position.

Position 3 (P3) Manage Airway

- Applies capnography
- Applies O2 **ONLY** if indicated
- Airway management as indicated by clinical presentation of patient

All protocols and education videos at

okctulomd.com



Position 1 (P1) Interventional Paramedic
Always on patient's right

- IV access
- ASA
- NTG
- Fentanyl only if indicated
- Fluid and vasopressor management

Position 2 (P2) Efficient Data Acquisition
Always on patients's left

- Vital signs
- Applies 4 lead cables
- Enters patient demographics into monitor/defibrillator
- Obtains 12-Lead ECG
- Applies defibrillation pads ANT-POST

Scene Coordination
Transport Logistics
Efficient Data Acquisition
Manage Airway
Interventional

Position 5 (P5) Transport Logistics
Always outside ACS "triangle"

- Ingress/Egress formulation
- Assists in equipment management

Position 6 (P6) Treatment Implementation Paramedic
Always outside ACS"triangle" at lower 1/2 of patient

- Physical and verbal assessment of patient
- Gathers concise history from patient/family/bystanders
- Maintains overall awareness of ACS dynamics, implements treatment plan based on clinical presentation
- Reviews 12-Lead ECG, determines presence of diagnostic quality and confirms STEMI criteria
- Transmission of diagnostic 12-Lead ECG to receiving facility
- Determines appropriate destination of ACS patient
  - STEMI alert via telephone contact via recorded line to receiving facility

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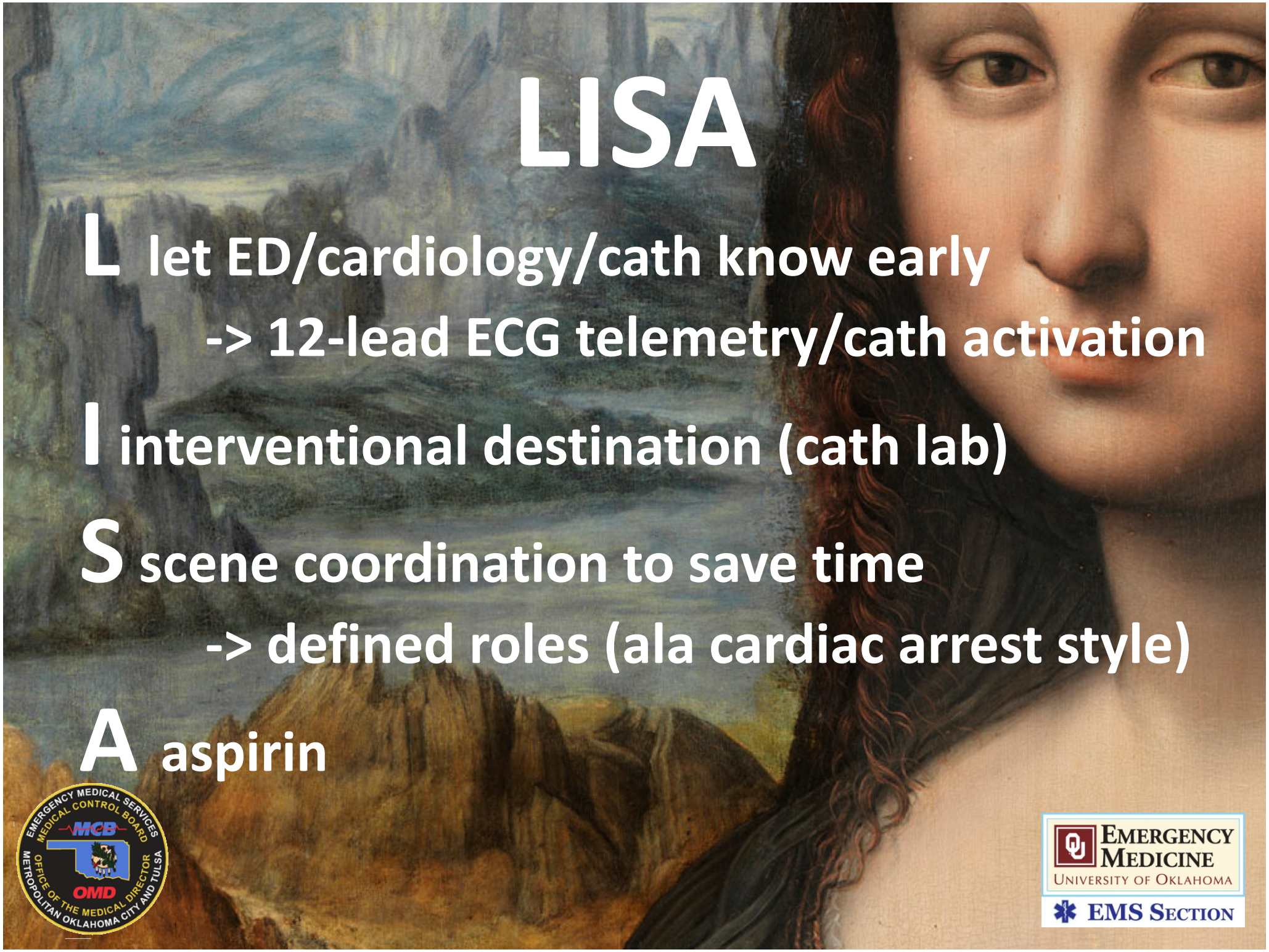
LISA
L let ED/cardiology/cath know early
-> 12-lead ECG telemetry/cath activation
I interventional destination (cath lab)
S scene coordination to save time
-> defined roles (ala cardiac arrest style)
A aspirin
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TULSA FIRE DEPARTMENT
PROTECTING LIFE, HEALTH, PROPERTY & ENVIRONMENT
EST. 1900

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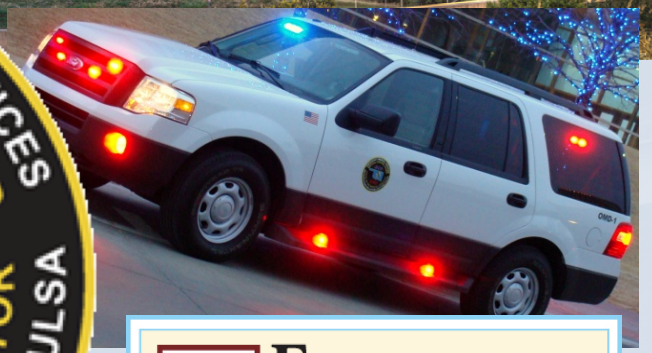

FIRE RESCUE EMS
OKC
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EST 1889

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