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TRIAL TO ASSESS CHELATION THERAPY

The Elephant in the Room

Toxic Metals and Cardiovascular Disease

Gervasio A. Lamas MD

Mount Sinai
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If you say there is an elephant in the room, you mean that there is an obvious problem or difficult situation that people do not want to talk about (but should).

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The Elephant in the Room



Near-universal contamination with vasculotoxic metals.

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LEAD-ATTRIBUTABLE RISK

- All cause mortality 18%
  - 412,000 deaths annually
- CVD mortality 37.4%
  - 256,000 deaths annually
- IHD mortality 28.7%

LANCET PUBLIC HEALTH 2018

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SATURNINE GOUT, AND ITS DISTINGUISHING MARKS.

By G. LORIMER, M.A., M.D.Edin., Buxton.

1886

The conclusions arrived at are based … of 107 cases of gout due to plumbism, which have oc… r's experience, and the subsequent remarks constitute … so observed.

6. *Arterial Thickening and Degeneration.*—This condition, noted in sixty-nine cases, consists of a sclerosis of the arterial coats, along with atheromatous changes. It is, in fact, a premature ageing of the arterial system. *a*. It may be due to the action of lead, which causes contraction of the muscular walls of the arteries, and raises arterial tension. *b*. It may be connected with the renal changes which arise in saturnine arthritis. *c*. It may depend on the condition of the blood in gout, which gives rise to increased arterial tension, and predisposes to atheroma. Cardiac hypertrophy is observed in saturnine gout, especially at the advanced period of the disease. The arterial changes, however, may occur independently of the cardiac. Pericarditis has been noted by Charcot and Gumbolt. One instance only was noted by the writer in the cases referred to.

Initial Report on Na_2EDTA Chelation for CAD

TREATMENT OF ANGINA PECTORIS WITH DISODIUM ETHYLENE DIAMINE TETRAACETIC ACID*†

By Norman E. Clarke, M.D.

Charles N. Clarke, M.D.

and

Robert E. Mosher, Ph.D.

(From the Department of Research, Providence Hospital, Detroit, Michigan)

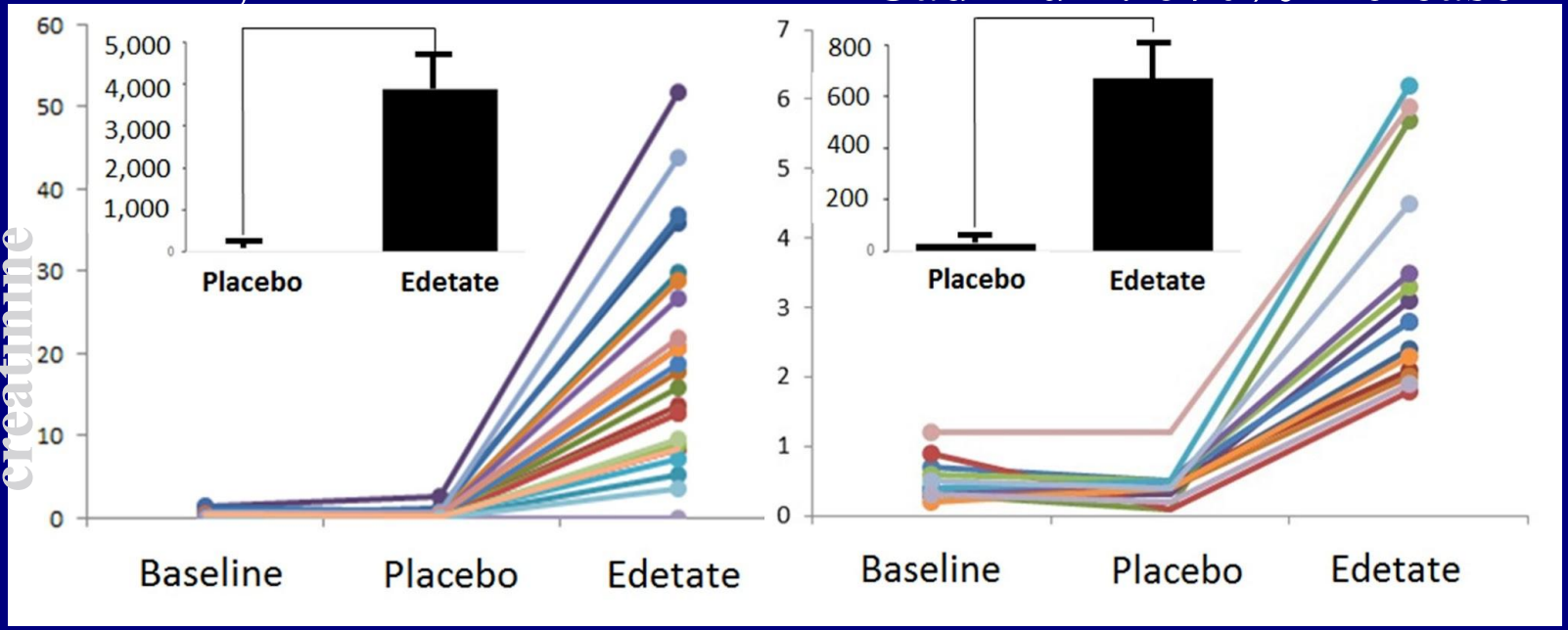
1956

Clarke NE, Clarke CN, Mosher RE. *Am J Med Sci.*

Effects of placebo or Na_2EDTA on urinary lead and cadmium (n=24).

Lead: 3,887% increase

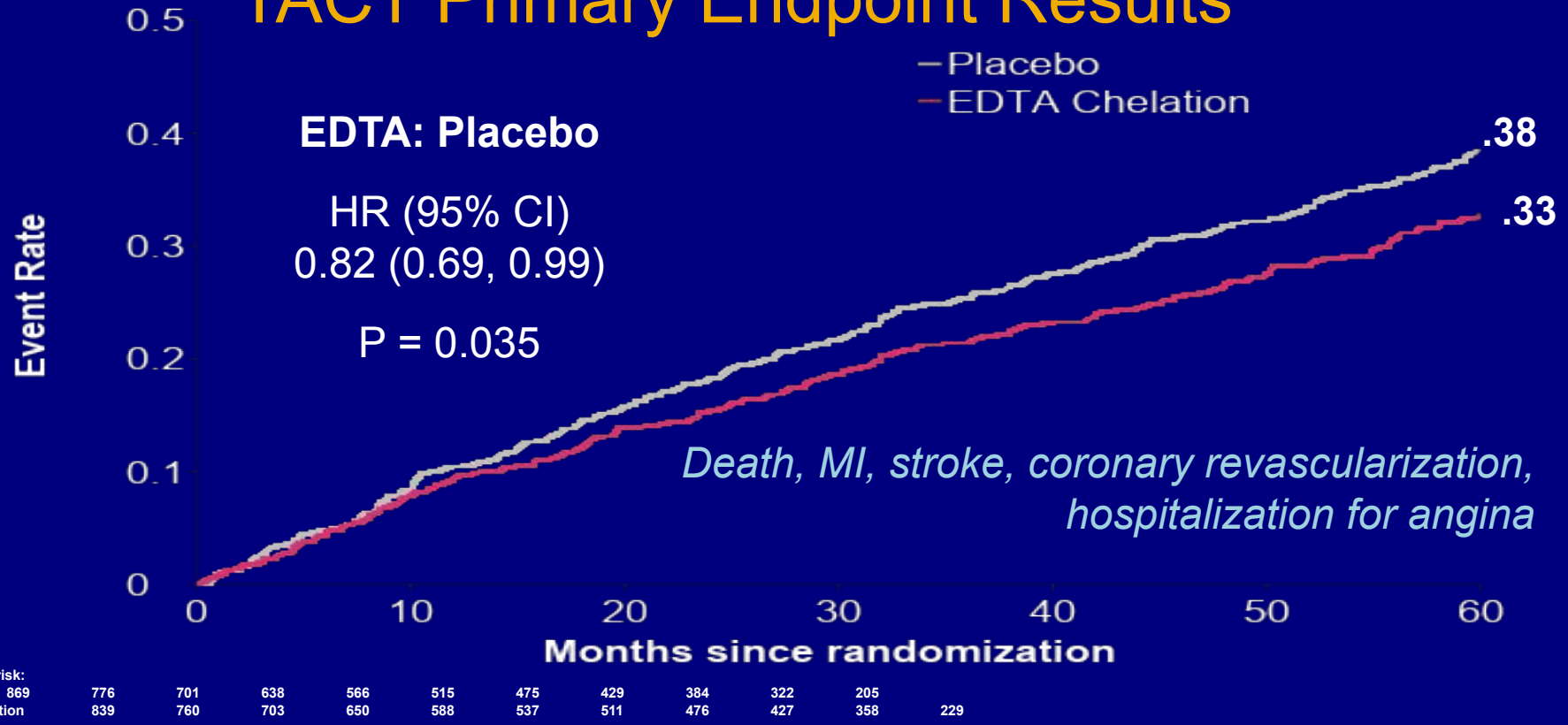
Cadmium: 670% increase



Lines = individual patient data points. Bars = mean ± SD of % change from baseline.

Arenas I et al. Environmental Res. 2017

TACT Primary Endpoint Results



Lamas G, et al. JAMA 2014

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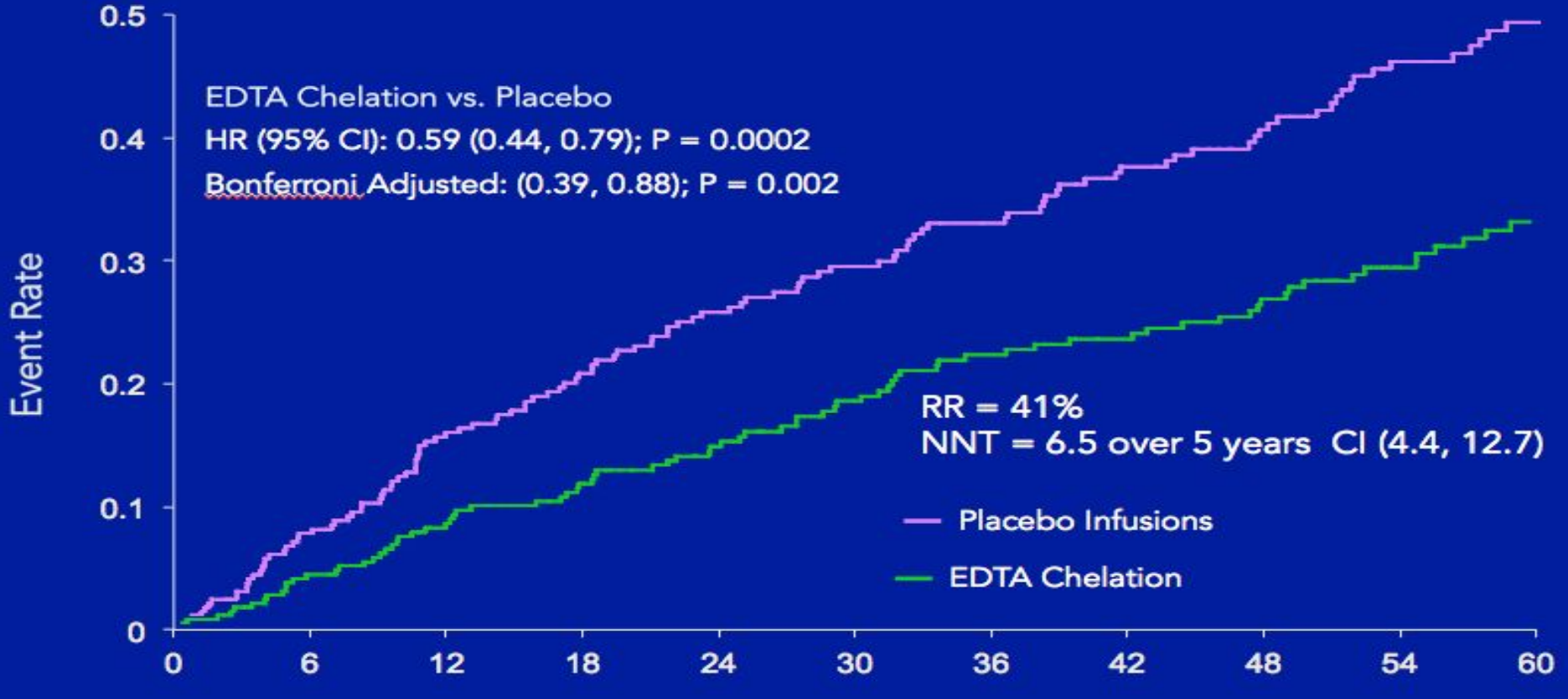
Patients with Diabetes



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MEETING COVERAGE 11.04.2012

7 COMMENTS

AHA: Dismay Greets Positive Chelation Study



by Chris Kaiser
Cardiology Editor, MedPage Today

This article is a collaboration between MedPage Today® and: AMERICAN COLLEGE of CARDIOLOGY

LOS ANGELES -- A long and arduous randomized trial found a slight benefit for chelation therapy in post-myocardial infarction patients, but researchers cautioned that the controversial therapy is not ready for prime time.

Action Points

In 1,708 patients followed for an average of 4 years, those receiving chelation therapy had significantly fewer composite events compared with placebo -- 26% versus 30% (HR 0.82, 95% CI 0.69 to 0.99, *P*=0.035), reported Gervasio Lamas, MD, of Mount Sinai Medical Center in Miami Beach, Fla.

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But in a separate substudy, there were no significant differences in patients' quality of life, according to Daniel Mark, MD, MPH, from Duke University Medical Center, and colleagues.

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Cancer Trials

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Little Benefit With Targeted T
Cancers

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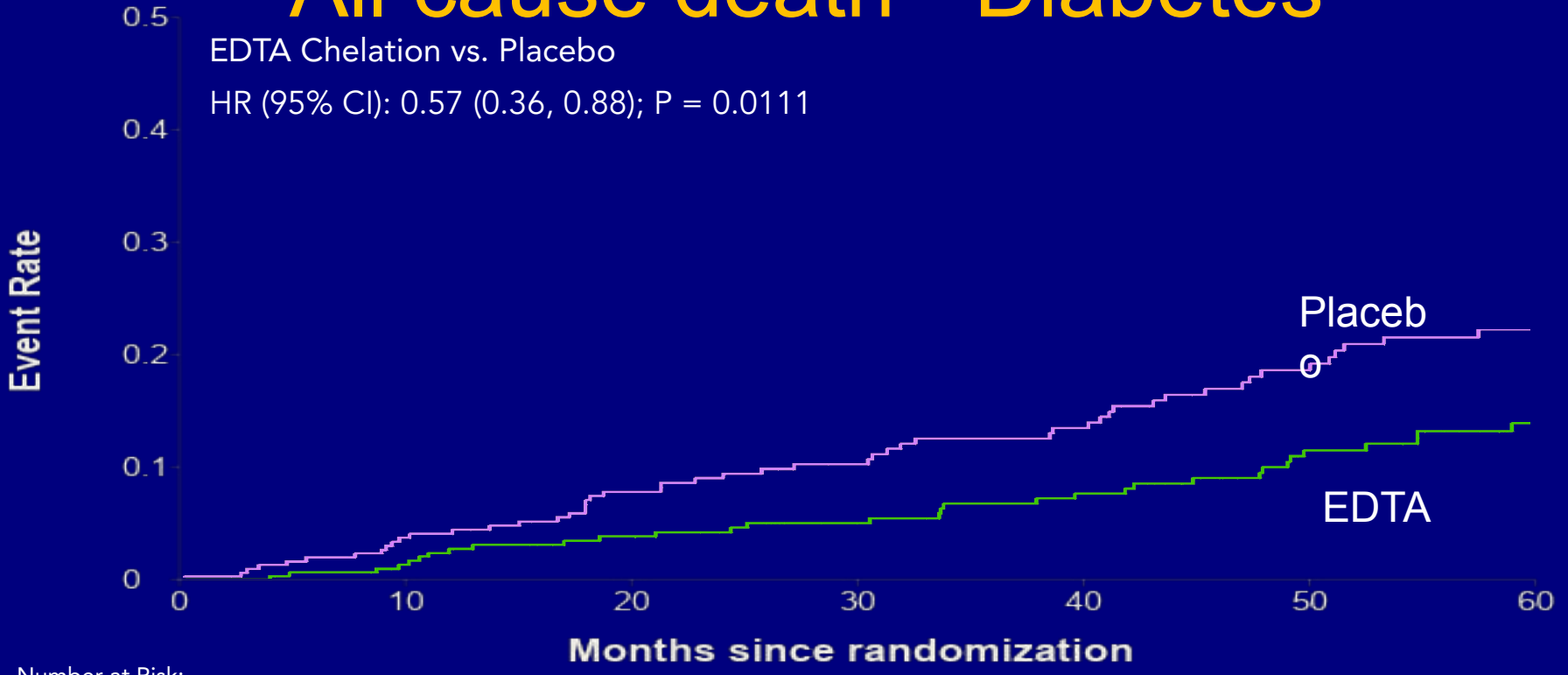
All cause death - Diabetes

EDTA Chelation vs. Placebo

HR (95% CI): 0.57 (0.36, 0.88); P = 0.0111



Number at Risk:

EDTA Chelation	322	303	283	267	251	230	222	211	183	160	101
Placebo	311	293	275	250	227	205	195	174	157	128	83

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Endpoints (Diabetes)

	EDTA Chelation (N=322)	Placebo (N=311)	Hazard Ratio (95% CI)	P-value
Primary Endpoint	25%	38%	0.59 (0.44, 0.79)	0.001
Cardiovascular Death (CVD), MI or stroke	11%	17%	0.60 (0.39, 0.91)	0.017
Death	10%	16%	0.57 (0.36, 0.88)	0.011
CVD	6%	9%	0.63 (0.35, 1.13)	0.118
MI	5%	10%	0.48 (0.26, 0.88)	0.015
Stroke	1%	1%	1.19 (0.27, 5.30)	0.829
Coronary revascularization	15%	20%	0.68 (0.48, 0.99)	0.042
Hospitalization for angina	2%	2%	0.72 (0.22, 2.36)	0.588

Escolar E, et al. CIRC:OUTCOMES 2015

2016 September 27- $36 Million



- Replicative trial of IV chelation and oral vitamins in 1200 post-MI diabetic patients
- Strong mechanistic component with a focus on toxic metals and a biorepository
- **TACT2 is happening; 926 patients enrolled**

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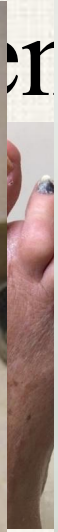
Pilot Study of Edetate Disodium in Diabetes with CLI

- Diabetic vascular disease leads to severe, distal, lower extremity arterial disease
- 108,000 non-traumatic major amputations in diabetic patients in 2015
- Cadmium and lead are associated with PAD
- Chelation literature, clinical experience, and [illegible]







NO ULCER

Yes/No
No
No
No
No

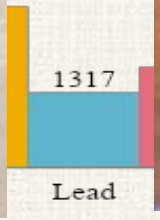
Patient DAS-004





Infu **n 48**

Yes/No
No
No
No
Yes (hyperbaric)



Patient DAS004



Baseline (03/24/17)



Infusion 20 (06/01/17)



Infusion 50 (08/23/18)

Toxic Metals Are a Modifiable Atherosclerotic Risk Factor



- *All the forces in the world are not so powerful as an idea whose time has come.* *-Victor Hugo*

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Thank you