

# Synthesis of Rare Disease in RED OCEAN of Meta-analysis (MA)

An experience on MA of losartan for Marfan syndrome (MFS)

Yi-No Kang M.A.Ed

# Is meta-analysis in RED OCEAN?



JAMA Internal Medicine

July 29, 2019

## Assessment of Publication Trends of Systematic Reviews and Randomized Clinical Trials, 1995 to 2017

Joshua D. Niforatos, MD, MTS<sup>1</sup>; Matt Weaver, MA, MS-LIS<sup>2</sup>; Michael E. Johansen, MD, MS<sup>3</sup>

### Author Affiliations

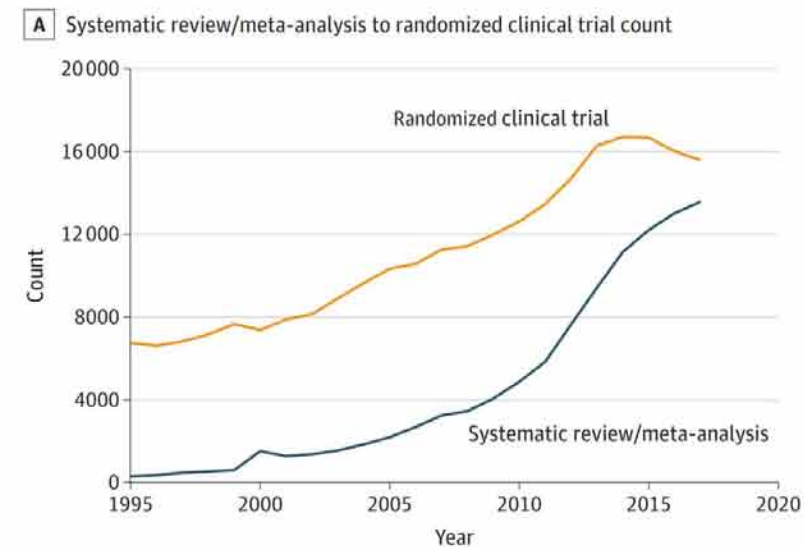
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<sup>3</sup>Grant Family Medicine, OhioHealth, Columbus, Ohio

JAMA Intern Med. 2019;179(11):1593-1594. doi:10.1001/jamainternmed.2019.3013

Figure 1. Published Systematic Reviews vs Randomized Clinical Trials, 1995-2017



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## Meta-analysis Metastasis

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*JAMA Intern Med.* 2019;179(11):1594-1595. doi:10.1001/jamainternmed.2019.2999

Although these trends indicate an alarming growth in the popularity of reviews across different specialties, rigorous systematic reviews and meta-analyses are still among the most informative research studies. The findings reported by Niforatos et al<sup>3</sup> do not suggest that reviews should be abandoned or that more trials are necessary. Instead, they support efforts to prioritize more robust trials and reviews, including living reviews in which meta-analyses are available online and continuously updated as additional studies are identified, as well as prospective and individual patient-level meta-analyses. Priority should be given to reviews that are conducted by nonconflicted investigators, including meta-analytical experts and research librarians, who help formulate search terms, identify relevant databases, and minimize any search inadequacies. To help curtail the production (and publication) of redundant, biased, and conflicted reviews, peer reviewers and editors may need additional training to assess the quality of submitted manuscripts. Together, these efforts can help slow the meta-analysis metastasis.



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Can J Cardiol. 2019 Sep 9. pii: S0828-282X(19)31221-8. doi: 10.1016/j.cjca.2019.09.002. [Epub ahead of print] Review.  
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# Synthesis of Rare Disease in RED OCEAN of Meta-analysis (MA)

An experience on MA of losartan for Marfan syndrome (MFS)

Yi-No Kang M.A.Ed,



# A quick glance at evidence on ARB for MFS



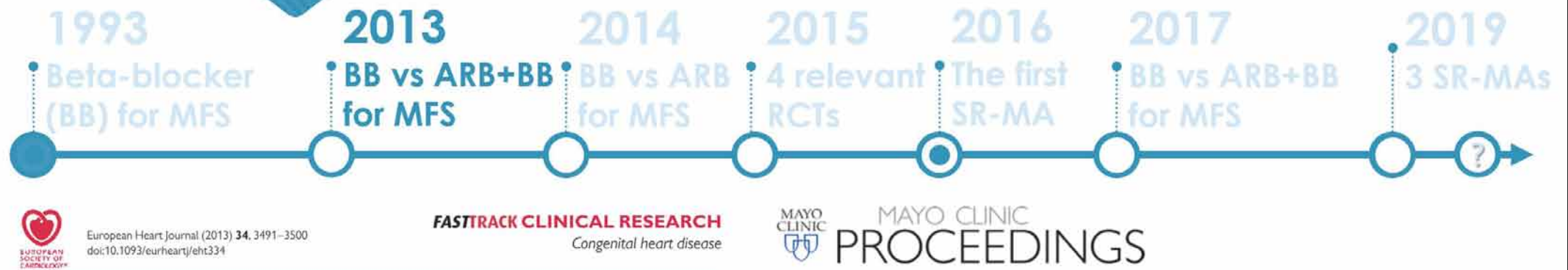
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## Progression of Aortic Dilatation and the Benefit of Long-Term $\beta$ -Adrenergic Blockade in Marfan's Syndrome

Jennifer Shores, Kenneth R. Berger, Edmond A. Murphy, and Reed E. Pyeritz

# A quick glance at evidence on ARB for MFS



## Losartan reduces aortic dilatation rate in adults with Marfan syndrome: a randomized controlled trial

Maarten Groenink<sup>1,2,3\*</sup>, Alexander W. den Hartog<sup>1,2†</sup>, Romy Franken<sup>1,2†</sup>, Teodora Radonic<sup>4</sup>, Vivian de Waard<sup>5</sup>, Janneke Timmermans<sup>6</sup>, Arthur J. Scholte<sup>7</sup>, Maarten P. van den Berg<sup>8</sup>, Anje M. Spijkerboer<sup>3</sup>, Henk A. Marquering<sup>3,9</sup>, Aeilko H. Zwinderman<sup>1,4</sup>, and Barbara J.M. Mulder<sup>1,2</sup>

## Losartan Added to $\beta$ -Blockade Therapy for Aortic Root Dilation in Marfan Syndrome: A Randomized, Open-Label Pilot Study

Hsin-Hui Chiu, MD<sup>a,b</sup>, Mei-Hwan Wu, MD, PhD<sup>b,\*</sup>, Jou-Kou Wang, MD, PhD<sup>b</sup>, Chun-Wei Lu, MD, PhD<sup>b</sup>, Shuenn-Nan Chiu, MD, PhD<sup>b</sup>, Chun-An Chen, MD<sup>b</sup>, Ming-Tai Lin, MD, PhD<sup>b</sup>, Fu-Chang Hu, MS<sup>c</sup>

# A quick glance at evidence on ARB for MFS



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## Atenolol versus Losartan in Children and Young Adults with Marfan's Syndrome

Ronald V. Lacro, M.D., Harry C. Dietz, M.D., Lynn A. Sleeper, Sc.D., Anji T. Yetman, M.D., Timothy J. Bradley, M.B., Ch.B., Steven D. Colan, M.D., Gail D. Pearson, M.D., Sc.D., E. Seda Selamet Tierney, M.D., Jami C. Levine, M.D., Andrew M. Atz, M.D., D. Woodrow Benson, M.D., Ph.D., Alan C. Braverman, M.D., et al., for the Pediatric Heart Network Investigators\*



# A quick glance at evidence on ARB for MFS



International Journal of Cardiology 217 (2016) 190–194



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The effect of losartan on progressive aortic dilatation in patients with Marfan's syndrome: a meta-analysis of prospective randomized clinical trials

References identified n=303

Medline: 92  
EMBASE: 211

Potential relevant human studies after first selection n=14

Studies included in meta-analysis n=6

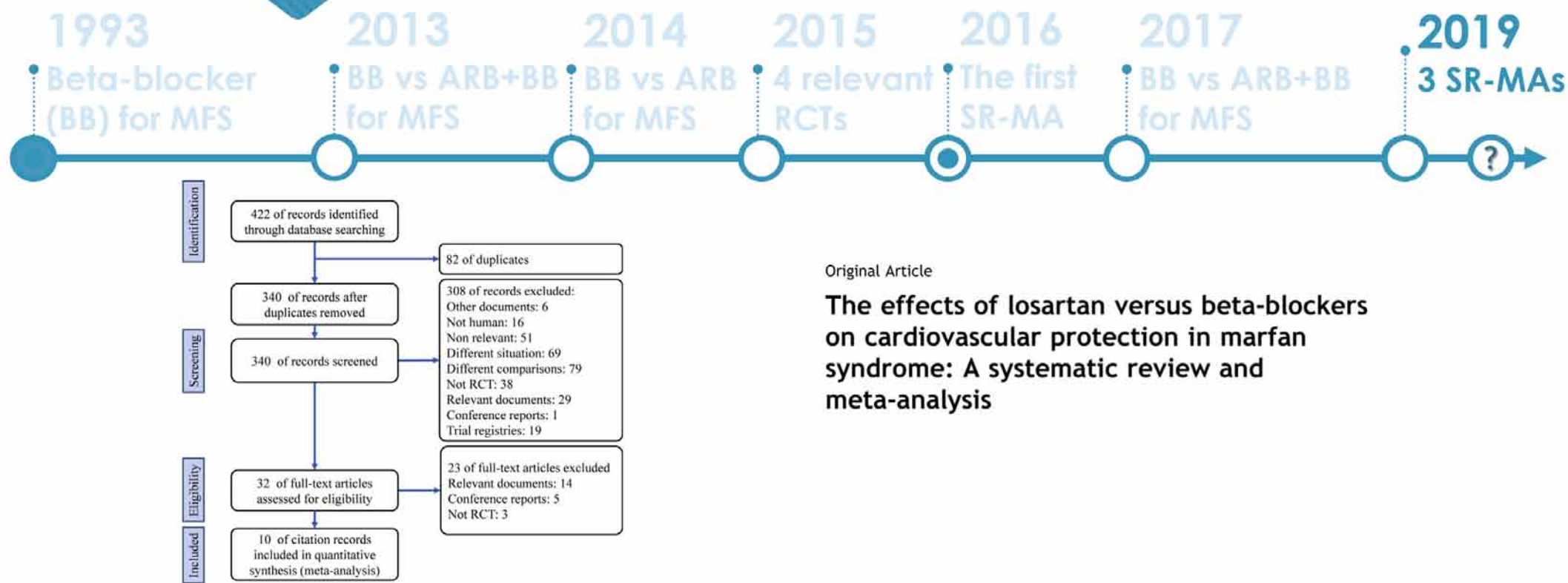
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Papers excluded due to the following reasons

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Rationale and design of a trial n=4

# Synthesized evidence on ARB for MFS



# Story for today: MA of a rare disease (MFS)



**Role of losartan in prevention of aortic dilatation in Marfan syndrome: A systematic review and meta-analysis**

Preventive Cardiology

Lin Li<sup>1</sup>, Naser Yamani<sup>2</sup>, Saed Al-Naimat<sup>3</sup>, Aiman Khurshid<sup>4</sup> and Muhammad S Usman<sup>5</sup>



**Pharmacotherapeutics for prevention of aortic root enlargement in Marfan Syndrome – A network meta-analysis of randomized controlled trials**

Preventive Cardiology

Aaqib H Malik<sup>1</sup>, Srikanth Yandrapalli<sup>2</sup>, Gayatri Pemmasani<sup>1</sup>, Senada S Malik<sup>3</sup> and Wilbert S Aronow<sup>2</sup>



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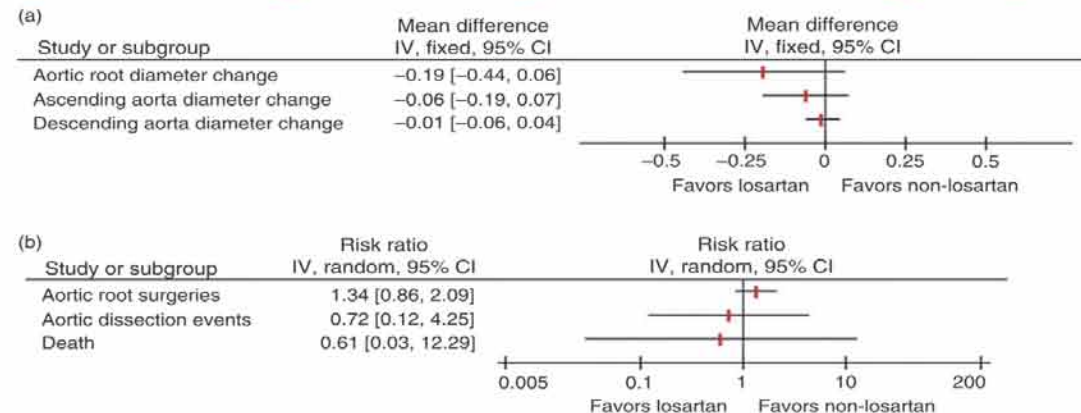
Lin Li<sup>1</sup>, Naser Yamani<sup>2</sup>, Saed Al-Naimat<sup>3</sup>, Aiman Khurshid<sup>4</sup> and Muhammad S Usman<sup>5</sup>



## Pharmacotherapeutics for prevention of aortic root enlargement in Marfan Syndrome – A network meta-analysis of randomized controlled trials

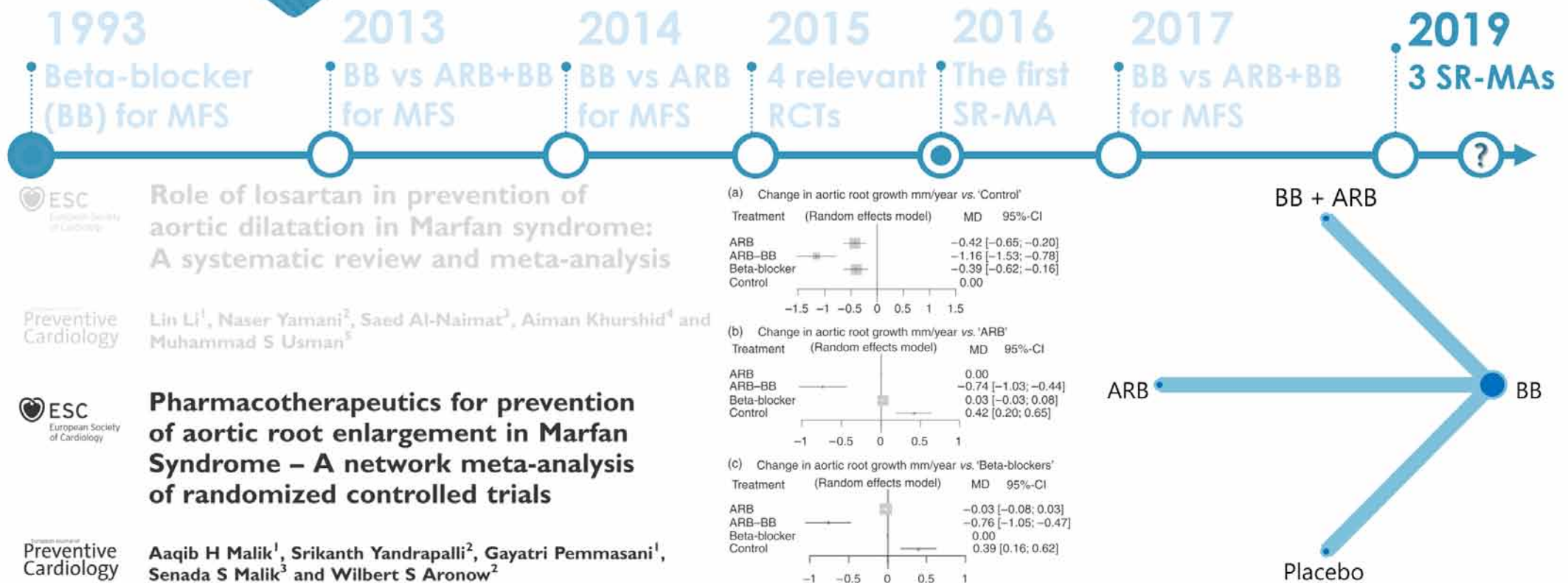
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**Figure 1.** Forest plot showing the pooled results of our meta-analysis. (a) The mean difference in diameter change of the aortic root, ascending aorta and descending aorta with losartan versus without losartan. (b) The incidence of aortic dissection, aortic root surgeries and death with losartan versus without losartan.

# Story for today: MA of a rare disease (MFS)



## Reflection: RIGHT

- Keep **R**IGOUR in research
- Keep clinical **I**NSIGHT in research
- Just **G**O ahead
- Just **H**UG comments from reviewers
- Wait for my **T**IME to come



Q&A

Thanks for your  
listening



Contacts



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