Dramatic downplay and underreporting of adverse events in patients undergoing percutaneous coronary intervention of chronic total occlusions with marked exaggeration of benefit despite tremendous trauma and harms done to patients undergoing unsuccessful chronic total occlusion intervention needs great attention

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## Title:

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## Letter to Editor:

Mohebbi et al (1) reported a long-term MACE rate of 10.6~% in the unsuccessful percutaneous intervention (PCI) of chronic total occlusion (CTO) patients. In their MACE rate, they did not include the in-hospital MACE rate of 28.2% in the unsuccessful PCI arm (perforation 8.1%., urgent surgery 0.9%, blood transfusions 19.1%, death 0.9%). Adding a long-term MACE rate, the total MACE rate was 38.7%. This is an extremely

high underreported MACE rate in patients undergoing CTO PCI. Furthermore, even though unsuccessful CTO patients suffered from tremendous complications during the procedure, long-term mortality was the same between the two groups. This proves that CTO PCI is only harmful with no hard benefit. They proudly mentioned that angina was better in patients with successful CTO PCI but failed to mention that it caused severe harm to the unsuccessful PCI arm and completely ignored the placebo effect. Trials comparing medical therapy to CTO PCI have never shown improvement in any important outcomes in the CTO PCI cohort. (2,3) Even if we assume that successful CTO PCI did improve angina, is it worth performing PCI in CTO patients with a total MACE rate of 38.2% without mortality benefit? Sadly, the truth is distorted in publications about CTO PCI.

Does anybody seriously think that any patient who is correctly informed about CTO PCI outcome would willingly undergo a very expensive procedure with a 38.2% risk of harm without improving mortality? Unfortunately, patients undergoing CTO PCI are misinformed and believe that CTO PCI will improve mortality without much-participated harm. The largest inpatient study showed dramatically increased mortality and complications in patients undergoing CTO PCI compared to non-CTO PCI. (4) Based on available data, CTO PCI should be strongly discouraged. It is time to have accountability for interventionalists who perform too many unnecessary CTO PCIs.(5)

## References:

- Mohebbi B, Sadeghipour P, Zolfaghari R, Vadalà G, Khalilipur E, Zahedmehr A, Diana D, Maadani M, Shakerian F, Kiani R, Hosseini Z, Rashidinejad A, Rouzitalab M, Khalesi S, Toulabi V, Sucato V, Di Fazio L, Taherian M, Amiripouya S, Ashuri S, Bayatian A, Naderi S, Bakhshandeh H, Moosavi J, Abdi S, Firouzi A, Alemzadeh-Ansari MJ, Galassi AR. Outcomes of chronic total occlusion percutaneous coronary intervention from the RAIAN (RAjaie Iran) registry. Indian Heart J. 2023 Nov-Dec;75(6):429-435.
- Werner GS, Hildick-Smith D, Martin Yuste V, Boudou N, Sianos G, Gelev V, Rumoroso JR, Erglis A, Christiansen EH, Escaned J, Di Mario C, Teruel L, Bufe A, Lauer B, Galassi AR, Louvard Y. Threeyear outcomes of A Randomized Multicentre Trial Comparing Revascularization and Optimal Medical Therapy for Chronic Total Coronary Occlusions (EuroCTO). EuroIntervention. 2023 Sep 18;19(7):571-579.
- 3. Kim MH, Mitsudo K, Jin CD, Kim TH, Cho YR, Park JS, Park K, Park TH, Serebruany V. Longterm clinical outcomes after successful and failed recanalization to native chronic Total occlusion: Insights from the Busan chronic Total occlusion (B-CTO) Registry. Cardiovasc Revasc Med. 2016 Jun;17(4):229-32.
- 4. Nathan A, Hashemzadeh M, Movahed MR. Percutaneous Coronary Intervention of Chronic Total Occlusion Associated with Higher Inpatient Mortality and Complications Compared With Non-CTO Lesions. Am J Med. 2023 Oct;136(10):994-999.
- Movahed MR. It is time to have better oversite and accountability in performing too many not indicated percutaneous coronary interventions in patients with chronic total occlusions. Int J Cardiol. 2019 Mar 1:278:38-39.