pagepress

GLOBAL CARDIOLOGY

Editor-in-Chief: Andrew J.S. Coats, Australia

eISSN: 2975-2728 https://www.globalcardiology.info/site

Impella *vs* intra-aortic balloon pump in patients with acute myocardial infarction complicated with cardiogenic shock: an updated systematic review and meta-analysis

Muhammad Ahmed, Serish Bano, Mutahira Asif, F N U Sidra, Meva Ram, Shahida Bibi

Department of Internal Medicine, Shaheed Mohtarma Benazir Bhutto Medical College Lyari, Karachi, Pakistan

Corresponding Author: Muhammad Ahmed, Department of Internal Medicine, Shaheed Mohtarma Benazir Bhutto Medical College Lyari, Karachi, Pakistan. E-mail: muhammadahmed5515@gmail.com

Key words: Impella; intra-aortic balloon pump; cardiogenic shock; meta-analysis.

©*The Author(s), 2025*
Licensee PAGEPress, Italy

***Note**: The publisher is not responsible for the content or functionality of any supporting information supplied by the authors. Any queries should be directed to the corresponding author for the article.*
All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article or claim that may be made by its manufacturer is not guaranteed or endorsed by the publisher.

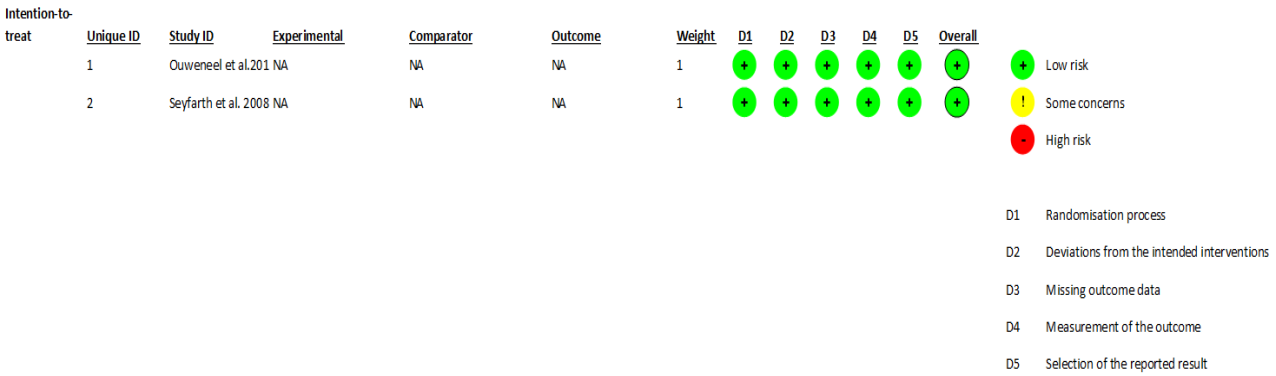

Figure S1. Risk of bias for the included randomized-controlled-trials

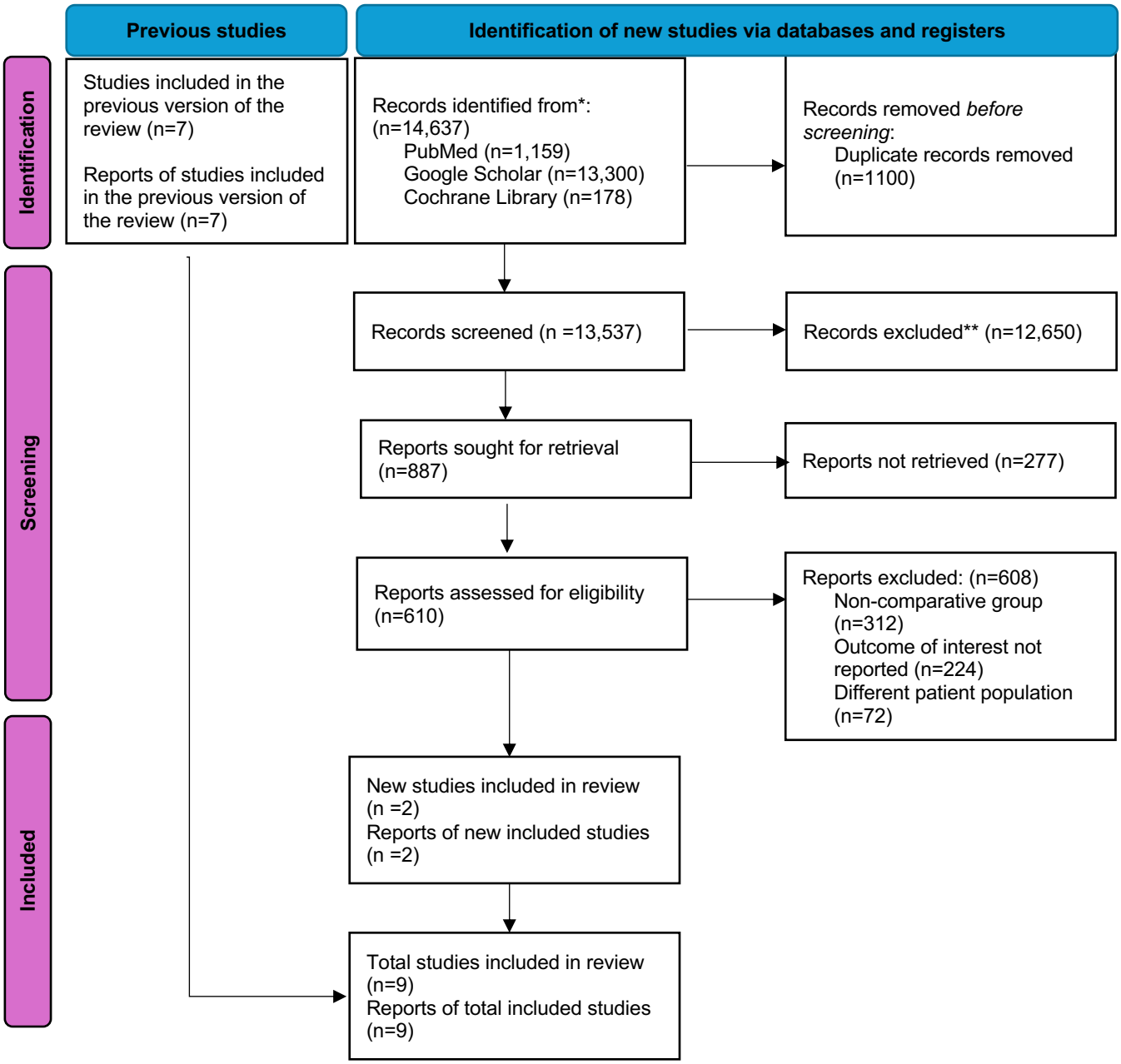

Figure S2. PRISMA flowchart

Table S1. Search strategy used in each database

Search string	**Database**	**Number of papers retrieved**
(Impella OR percutaneous ventricular assist device OR Intra-aortic balloon pump OR IABP) AND (Acute Myocardial Infarction OR AMI OR acute MI OR AMICS OR STEMI OR NSTEMI) AND (Cardiogenic Shock OR Cardiac Shock)	PubMed	1,159
(Impella OR percutaneous ventricular assist device OR Intra-aortic balloon pump OR IABP) AND (Acute Myocardial Infarction OR AMI OR acute MI OR AMICS OR STEMI OR NSTEMI) AND (Cardiogenic Shock OR Cardiac Shock)	Cochrane Library	178
(Impella OR Intra-aortic balloon pump OR IABP) AND (Acute Myocardial Infarction OR AMI OR acute MI OR AMICS) AND (Cardiogenic Shock OR Cardiac Shock	Google Scholar	13,300

Table S2. Newcastle-Ottawa quality assessment scale for cohort studies.

	Study Name					
	Alushi et al. 2019	Manzo-Silberman et al. 2013	Padberg et al. 2024	Pieri et al. 2018	Schrage et al. 2019	Kim et al. 2022
Selection (4)						
Representativeness of the exposed cohort	*	*	*	*	*	*
Selection of the non-exposed cohort	*	*	*	*	*	*
Ascertainment of exposure	*	*	*	*	*	*
Demonstration that outcome of interest was not present at start of the study	*	*	*	*	*	*
Comparability (2)						

Comparability of cohorts based on the design or analysis	**	**	*	**	**	**
Outcome (3)						
Assessment of outcome	*	*	*	*	*	*
Was follow-up long enough for outcomes to occur	*	*	*	*	*	
Adequacy of follow-up of cohorts	*	*	*	*	*	
Total (9)	9	9	8	9	9	7

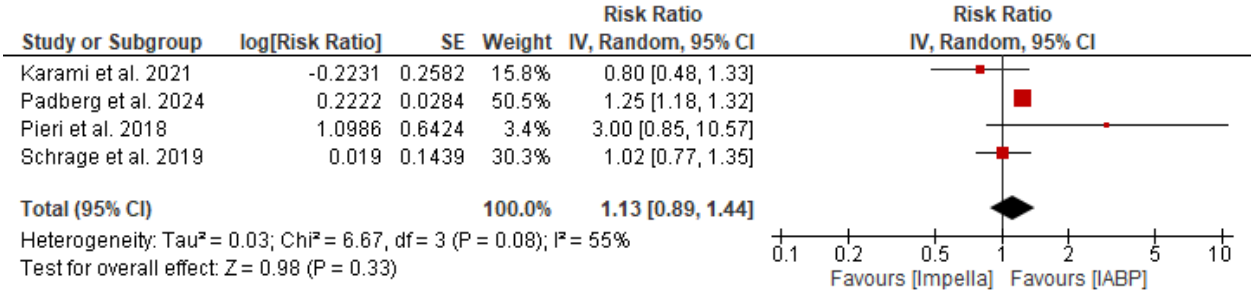

Figure S3. Forest plot for long-term mortality

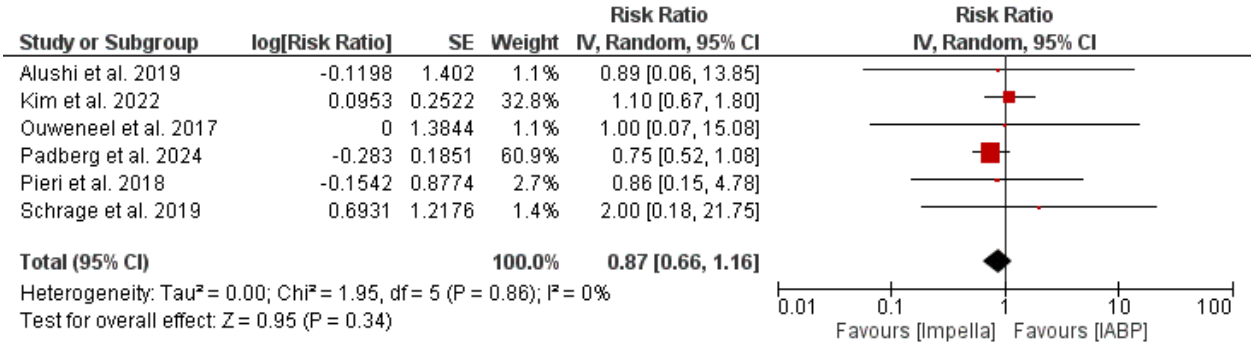

Figure S4. Forest plot for stroke

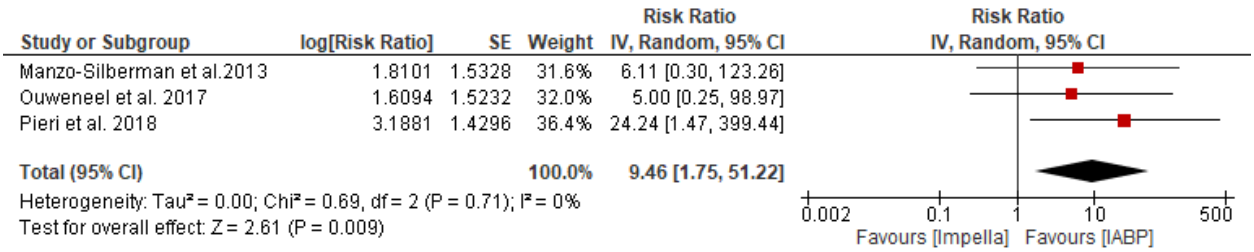

Figure S5. Forest plot for hemolysis

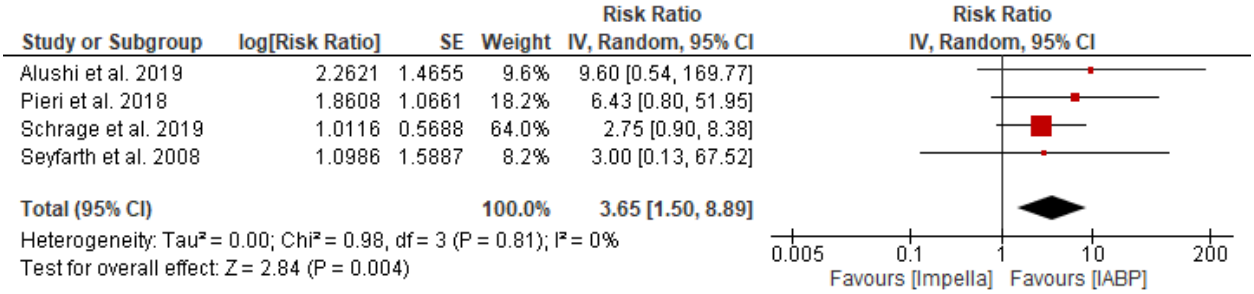

Figure S6. Forest plot for limb ischemia

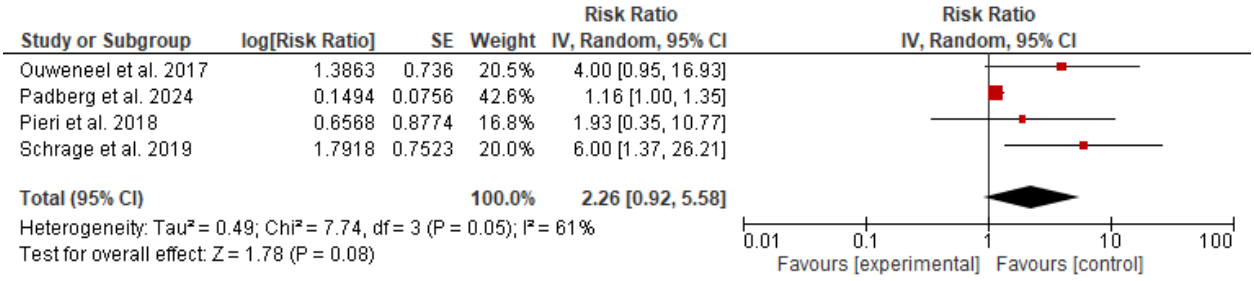

Figure S7. Forest plot for major bleeding

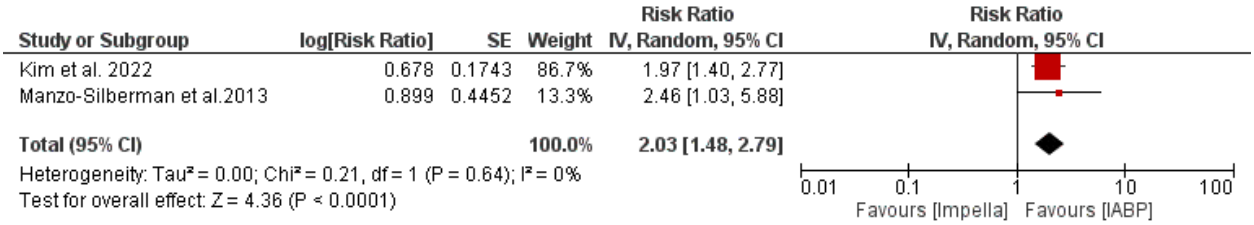

Figure S8. Forest plot for transfusion

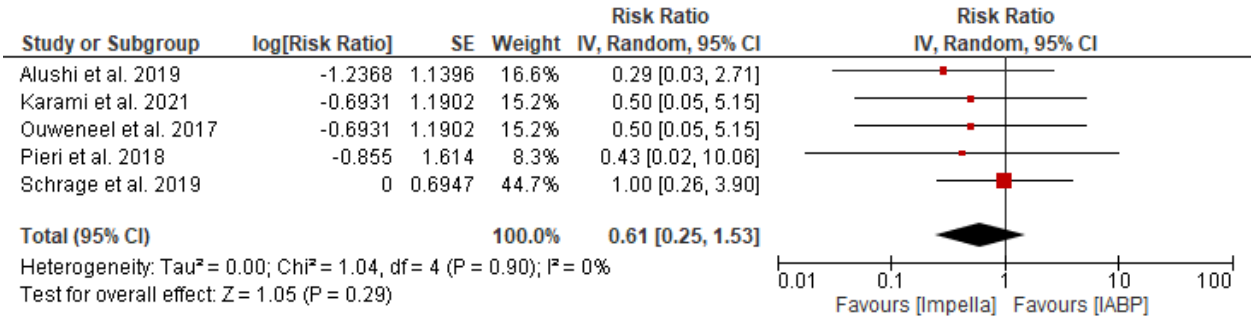

Figure S9. Forest plot for myocardial infarction

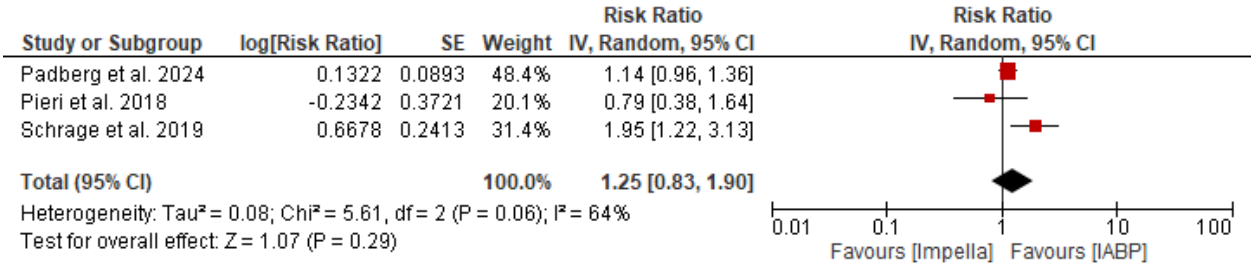

Figure S10. Forest plot for sepsis

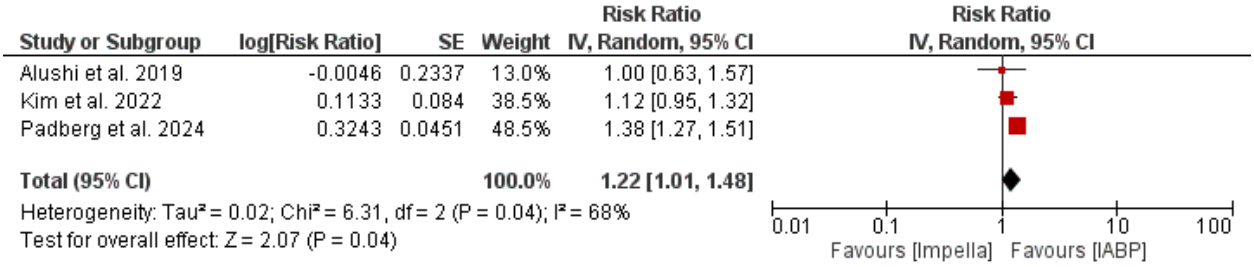

Figure S11. Forest plot for acute kidney injury

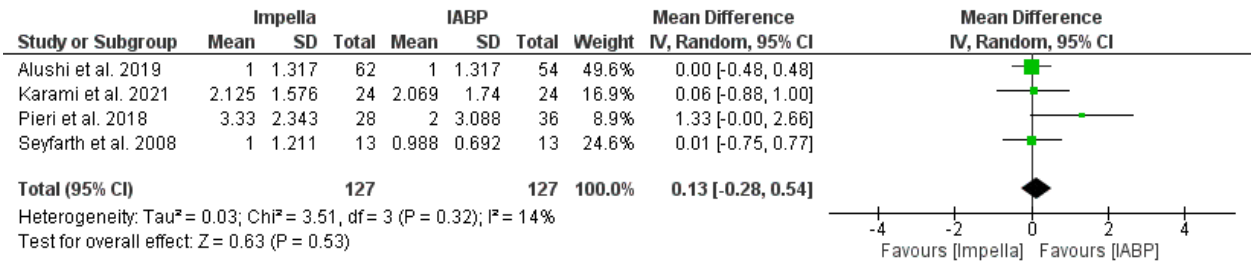

Figure S12. Forest plot for the inotropic length of support

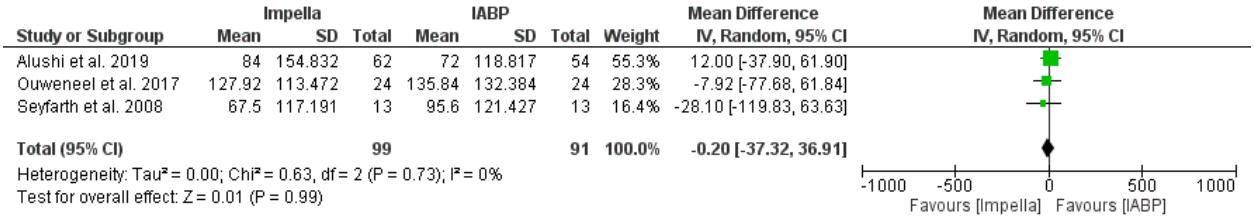

Figure S13. Forest plot for the mechanical ventilation

Figure S14. Scatter plot for mean age

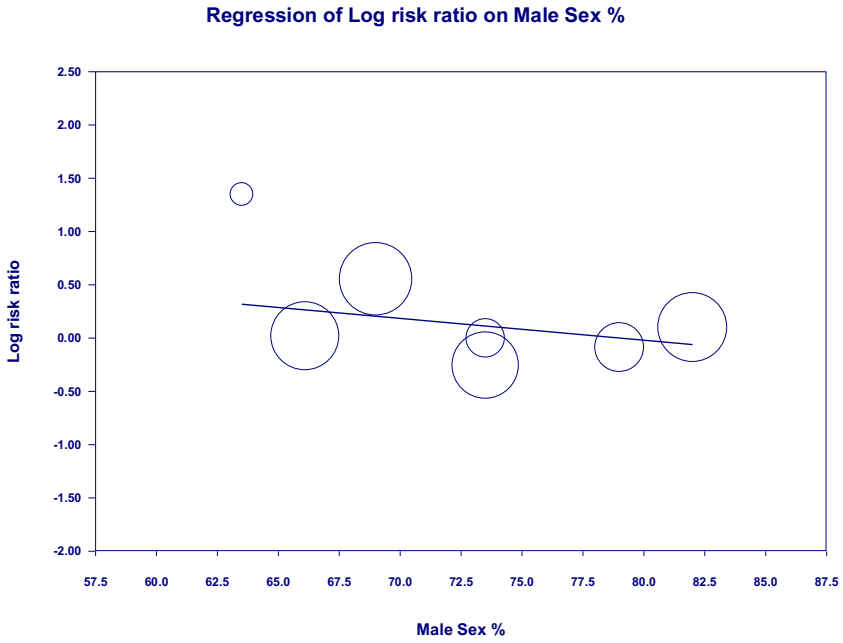

Figure S15. Scatter plot for male sex %

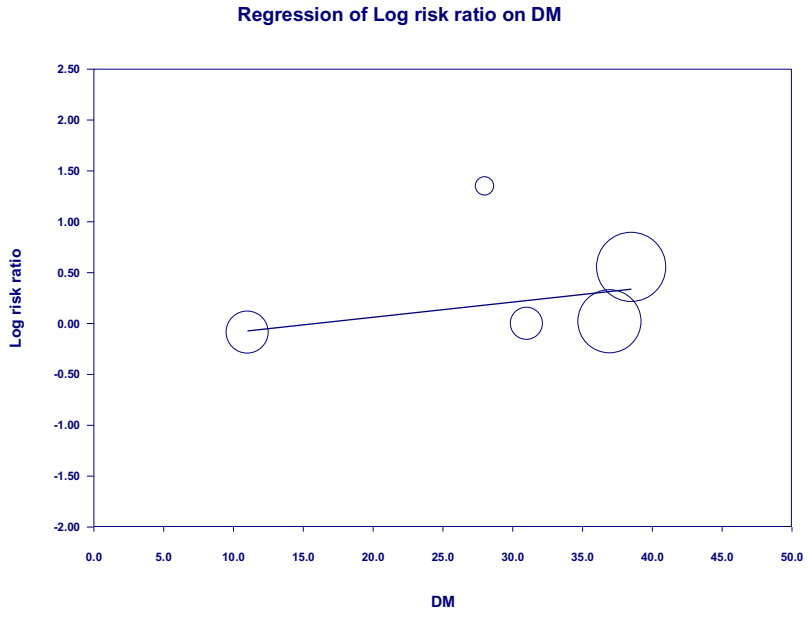

Figure S16. Scatter plot for diabetes mellitus

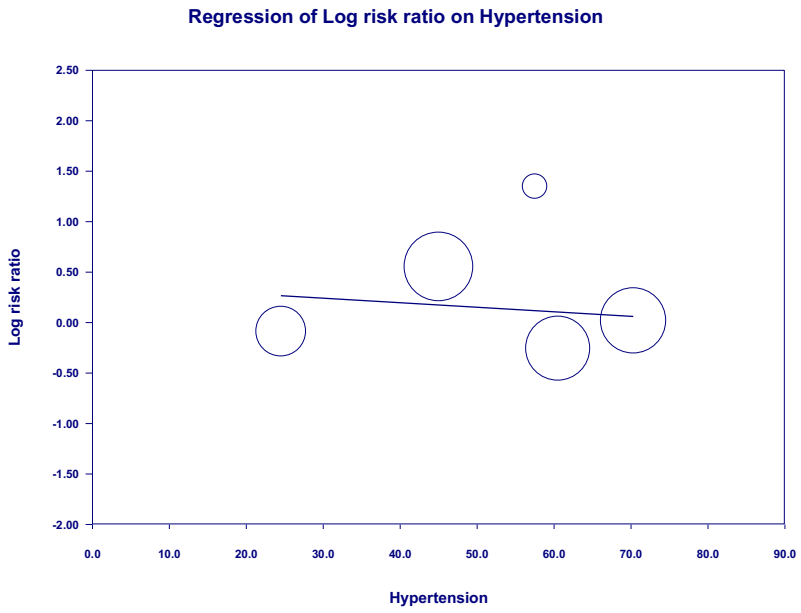

Figure S17. Scatter plot for hypertension

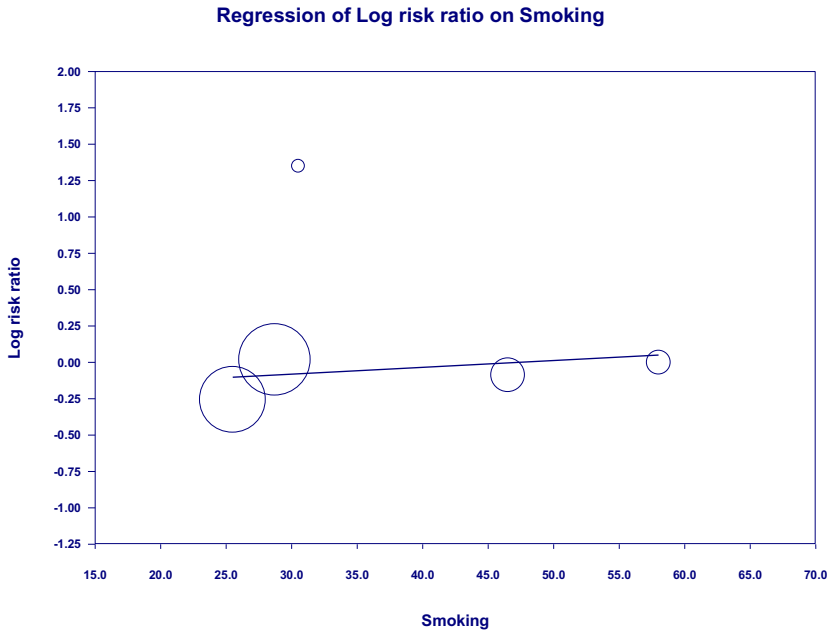

Figure S18. Scatter plot for smoking

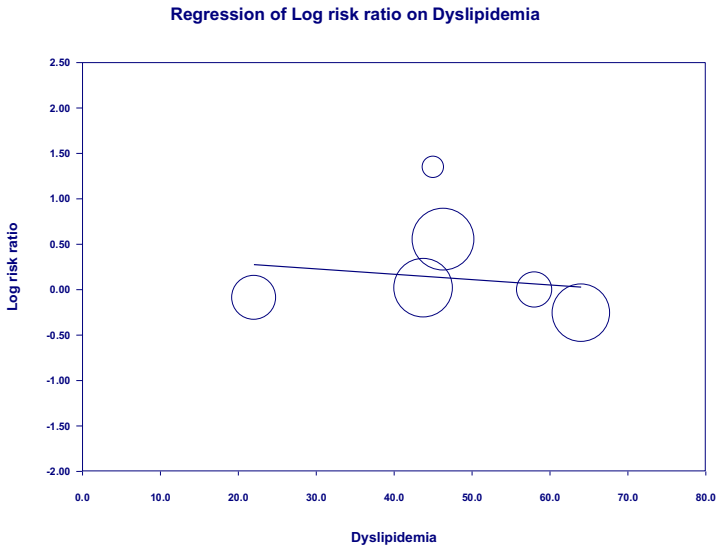

Figure S19. Scatter plot for dyslipidemia

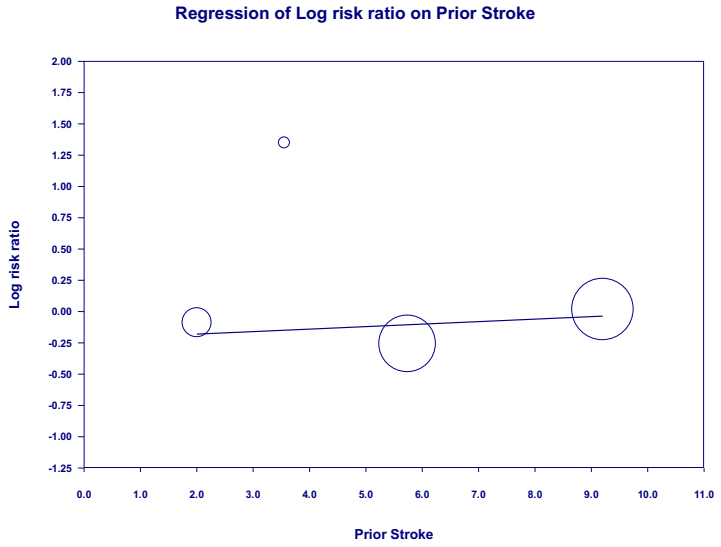

Figure S20. Scatter plot for prior stroke

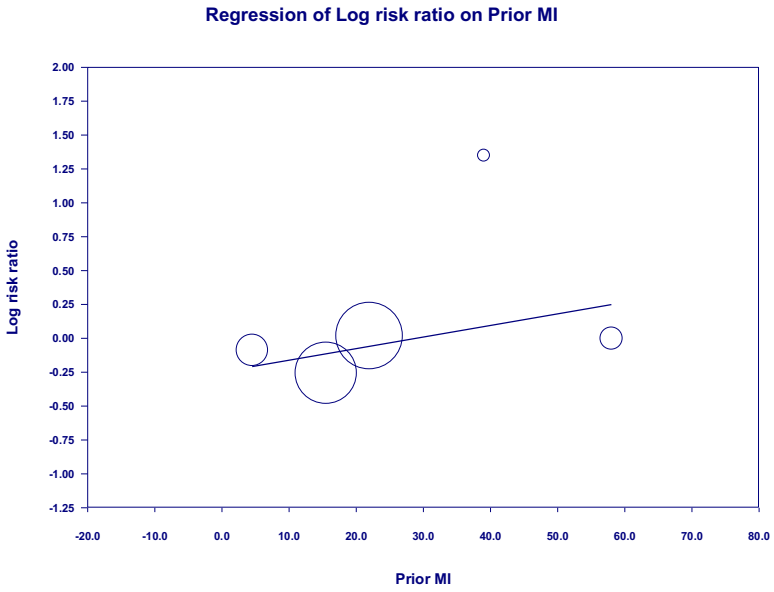

Figure S21. Scatter plot for prior MI

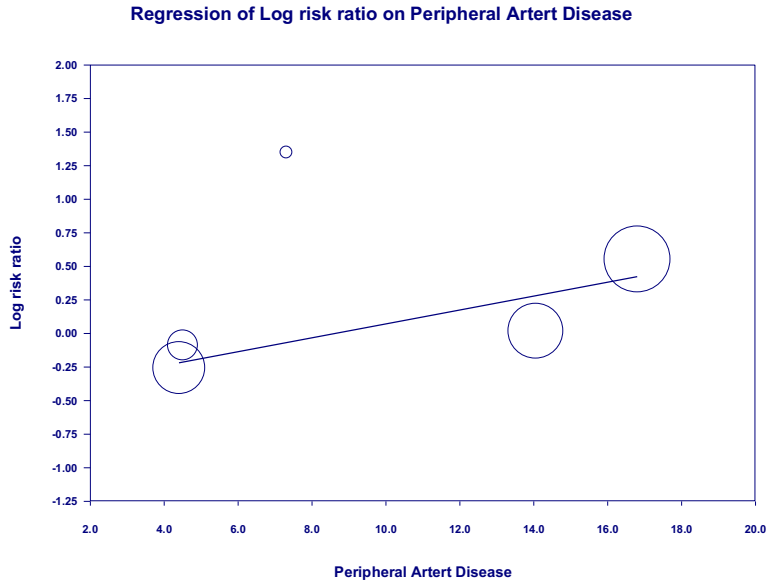

Figure S22. Scatter plot for PAD

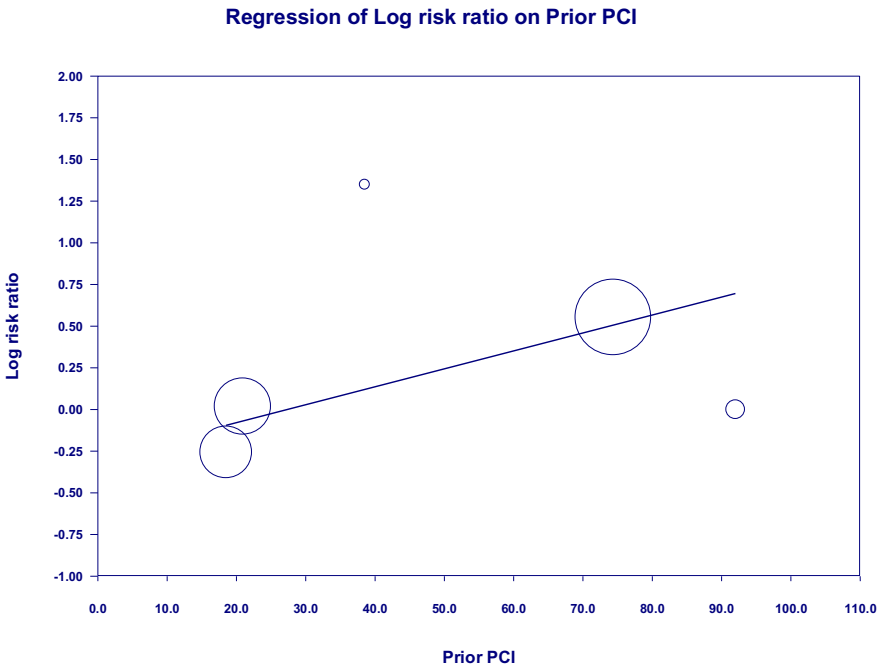

Figure S23. Scatter plot for prior PCI

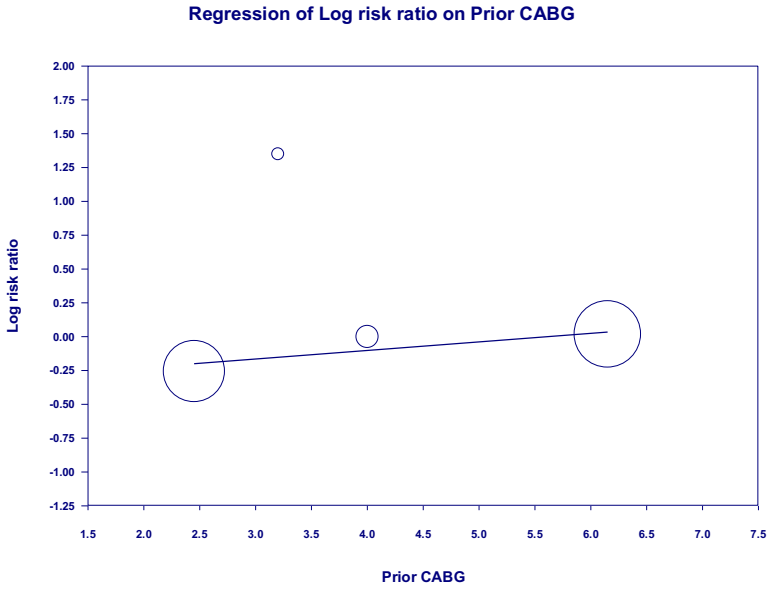

Figure S24. Scatter plot for prior CABG

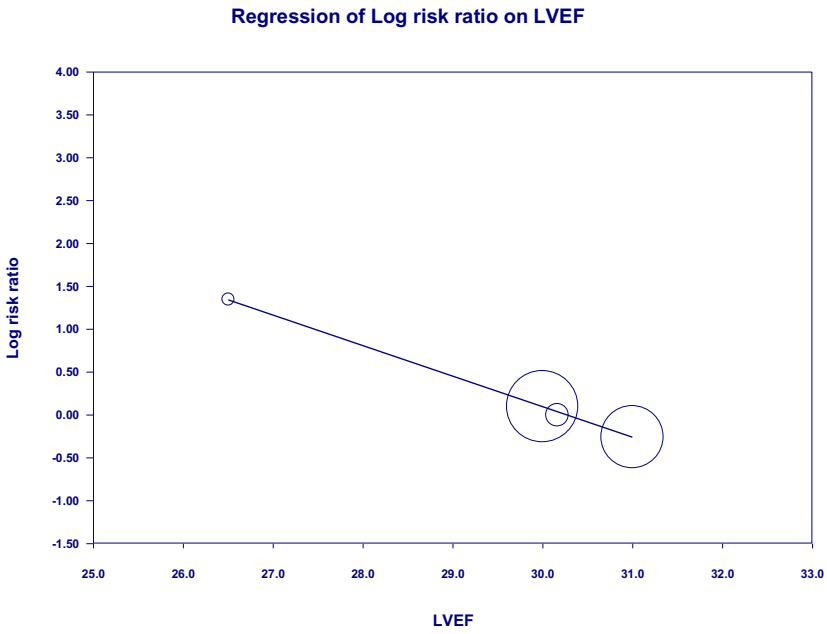

Figure S25. Scatter plot for LVEF