

**Supplementary table 1. Quality assessment of included papers**

Article	Item grade															Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Anger, T et al., 2009	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	10
Bossé et al., 2009	1	1	1	1	1	1	0	1	0	1	0	0	1	1	1	11
Bourgeois et al., 2021	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	11
Breyne et al., 2010	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14
Cantor et al., 2021	1	1	1	1	0	0	1	1	0	1	1	0	1	1	0	10
Chen et al., 2020	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	11
Coffey et al., 2016	1	1	1	0	0	1	0	1	0	1	1	1	1	1	0	10
Ducharme et al., 2013	1	1	1	1	0	1	1	1	0	0	1	0	0	1	1	10
Ertas et al., 2007	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	11
Gaudreault et al., 2011	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	11
Greene et al., 2020	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	12
Guaque-Olarte et al., 2015	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	13
Hadji et al., 2016	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14
Helske et al., 2004	1	1	1	1	1	1	0	1	0	1	0	0	1	1	0	10
Jiao et al., 2019	1	1	1	1	0	1	0	1	0	0	1	1	1	1	1	11
Kamstrup et al., 2014	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	11
Kossar et al., 2020	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14
Li et al., 2020	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	12
Lu et al., 2019	1	1	1	1	0	1	1	1	0	1	0	1	1	1	0	11
Mahmut et al., 2014	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	10
Mkanez et al., 2018	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	12
Nagy et al., 2012	1	1	1	1	1	1	0	1	0	0	0	0	1	1	1	10
Peltonen et al., 2011	1	1	1	1	1	1	0	1	0	1	0	0	0	1	1	11
Peltonen et al., 2009	1	1	1	1	0	0	0	1	0	1	1	1	1	1	0	10
Peltonen et al., 2009	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	13
Peltonen et al., 2007	1	1	1	1	0	1	0	1	0	1	1	0	1	1	0	10
Pohjolainen et al., 2012	1	1	1	1	0	1	0	1	0	0	1	1	0	1	1	10
Qiao et al., 2022	1	1	1	1	1	1	0	1	0	0	1	1	0	1	0	10
Schlötter et al., 2018	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14
Song et al., 2019	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	12
Sun et al., 2021	1	1	1	0	1	1	0	1	0	1	1	1	1	1	0	11
Teng et al., 2020	1	1	1	1	0	1	1	0	0	1	1	1	1	1	0	11
Thanassoulis et al., 2013	1	1	1	0	1	1	1	0	1	1	1	1	1	1	0	12
Thériault et al., 2018	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	10
Wang et al 2021	1	1	1	1	0	1	0	1	0	1	1	0	1	1	0	10
Wang et al 2018	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0	11
Wypasek et al., 2014	1	1	1	1	0	1	0	0	0	1	1	0	1	1	1	10
Wypasek et al., 2015	1	1	1	1	0	1	1	1	0	1	0	0	1	1	0	10
Yang et al., 2020	1	1	1	0	0	1	0	1	0	0	1	1	1	1	1	10
Yang et al., 2020	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	12
Zhang and Ma, 2019	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14
Zhu et al., 2019	1	1	1	1	1	1	0	1	0	1	0	0	1	1	0	10

(1) answer the research question of the present systematic review (genetic variants, mRNA, miRNA and proteins on CAVD) presenting specific results for variants that influence the mechanisms related to CAVD, (2) Indicate the study's design with a commonly used term in the title or the abstract, (3) Provide in the abstract an informative and balanced summary of what was done and what was found, (4) State specific objectives, including any prespecified hypotheses, (5) Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, (6) Describes the selected sample: cellular, tissues or sequences of animal or humans. Protein obtained and the intervention for each group, and size, (7) Clearly define all outcomes and potential confounders. Give diagnostic criteria, if applicable, (8) For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group, (9) Describe any efforts to address potential sources of bias, (10) Explain how the study size was arrived at (cases-controls), (11) Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why, (12) Describe all statistical methods, including those used to control for confounding, (13) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included (case-controls), (14) Summarize key results with reference to this review question, (15) Discuss limitations of the study, considering sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias.