

Supplementary File to
Effect of prolonged and substantial weight loss on incident atrial fibrillation. A systematic review and meta-analysis
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Supplementary Table S1. sensitivity analyses

Supplementary Table S2. comparison of results obtained with random model (OR), fixed model, and risk ratios published by authors

Supplementary Figure S1. Meta-analysis after exclusion of study [32].

Supplementary Table S3. The Newcastle Ottawa Scale [34]

Supplementary Table S4. Comparison of baseline conditions of patients undergoing bariatric surgery (BS) and controls in the ten studies included in this meta-analysis

Supplementary Table S1. sensitivity analyses

Sensitivity analysis	Studies	OR (95% CI), p	Heterogeneity (Q), p, I2
Bariatric surgery vs controls	10	0.665 (0.475-0.929), 0.017	48.98, p = 0.001, 81.6%
Percent weight loss > 22%	5	0.525 (0.316-0.872), 0.013	25.52, p = 0.001, 84.3%
Percent weight loss < 22%	5	0.827 (0.539-1.271), 0.387	22.30, p = 0.001, 82.1%
Percent weight loss < 22% *	4	0.696 (0.547-0.885), 0.003	9.71, p = 0.021, 69.1%
Percentage of patients with diabetes < 100	7	0.596 (0.406-0.875), 0.008	30.19, p = 0.001, 80.1%
Percentage of patients with diabetes = 100	3	0.880 (0.394-1.969), 0.756	18.43, p = 0.001, 89.1%
Percentage of patients with diabetes = 100 *	2	0.629 (0.443-0.893), 0.010	3.92, p = 0.048, 74.5%
Newcastle Ottawa Scale > mean value	6	0.570 (0.365-0.890), 0.013	29.64 p = 0.001, 83.1%
Newcastle Ottawa Scale < mean value	4	0.840 (0.477-1.478), 0.545	19.27 p = 0.001, 84.4%
Newcastle Ottawa Scale < mean value *	3	0.661 (0.498-0.878), 0.004	5.34 p = 0.096, 62.6%

* excluded study [32]

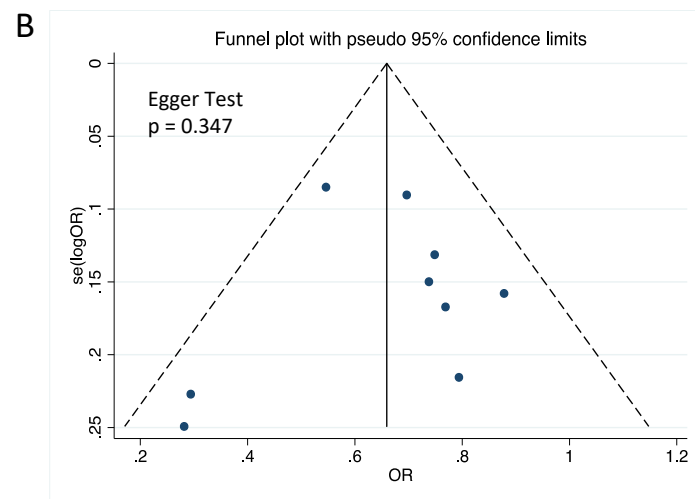
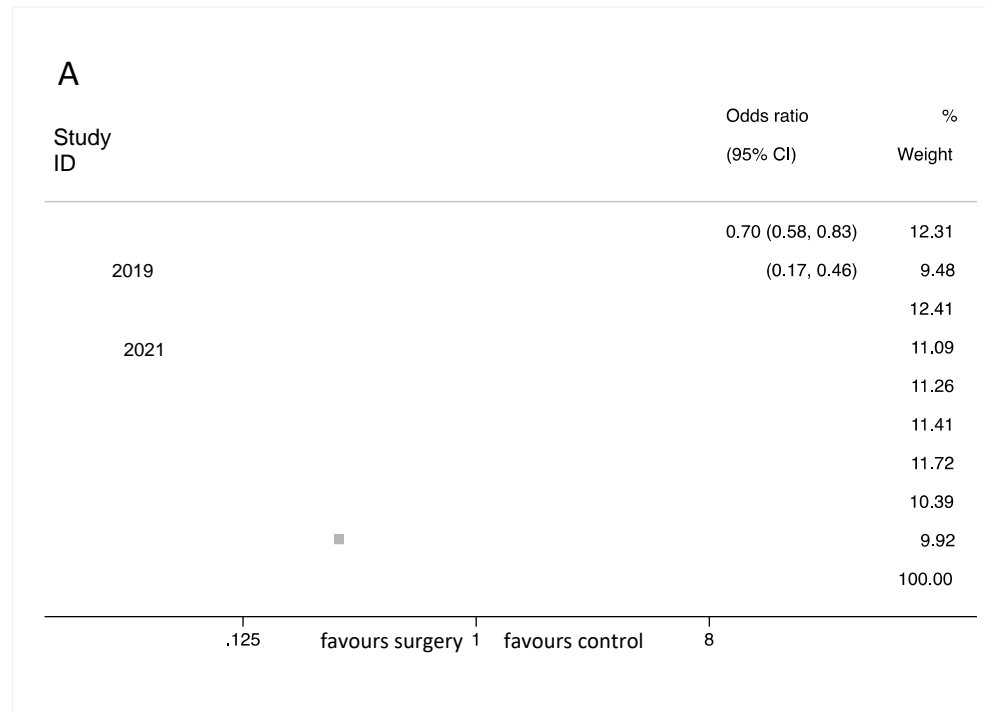
Supplementary Table S2. comparison of results obtained with random model (OR), fixed model, and risk ratios published by authors

Sensitivity analysis	Studies	OR (95% CI), p	RR (95% CI), p	ES (95% CI, p
Bariatric surgery vs controls	10	0.665 (0.475-0.929), 0.017	0.687 (0.564-0.839), 0.001	0.687 (0.576-0.819), 0.001
Percent weight loss > 22	5	0.525 (0.316-0.872), 0.013	0.508 (0.310-0.832), 0.007	0.735 (0.637-0.849), 0.001
Percent weight loss < 22%	5	0.827 (0.539-1.271), 0.387	0.807 (0.630-1.033), 0.088	0.832 (0.609-1.136), 0.247
Percent weight loss < 22 *	4	0.696 (0.547-0.885), 0.003	0.712 (0.596-0.851), 0.001	0.757 (0.609-0.875), 0.001
Percentage of patients with diabetes < 100	7	0.596 (0.406-0.875), 0.008	0.633 (0.493-0.812), 0.001	0.706 (0.557-0.895), 0.004
Percentage of patients with diabetes = 100	3	0.880 (0.394-1.969), 0.756	0.855 (0.539-1.356), 0.506	0.806 (0.581-1.119), 0.197
Percentage of patients with diabetes = 100 *	2	0.629 (0.443-0.893), 0.010	0.649 (0.505-0.834), 0.001	0.770 (0.619-0.958), 0.019
Newcastle Ottawa Scale > mean value	6	0.570 (0.365-0.890), 0.013	0.610 (0.458-0.812), 0.001	0.647 (0.499- 0.840), 0.001
Newcastle Ottawa Scale < mean value	4	0.840 (0.477-1.478), 0.545	0.821 (0.578-1.166), 0.270	0.759 (0.612-0.942), 0.012
Newcastle Ottawa Scale < mean value *	3	0.661 (0.498-0.878), 0.004	0.670 (0.549-0.819), 0.001	0.810 (0.688- 0.954), 0.012

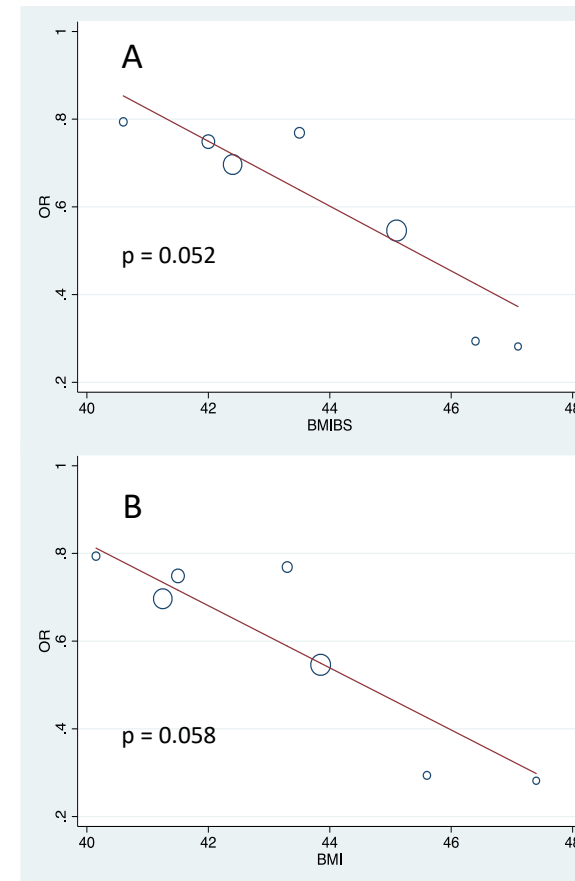
* excluded study [32]

Supplementary Figure S1. Meta-analysis after exclusion of study [32].

A. Forest plot of pooled hazard ratios of atrial fibrillation; B. funnel plots with 95% CI; C. meta-regression analysis of effect as a function of BMI of BS patients (A) and of the whole cohort (B). OR = Odds Ratio; 95% CI = confidence interval;



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Supplementary Table S3. The Newcastle Ottawa Scale [34]

The Newcastle Ottawa Scale accredits a 1star (=yes, when adequate quality was assessed) or 0 (=no) for specific point in three subcategories.

Selection

- 1- Representativeness of the exposed cohort
- 2- Selection of the non-exposed cohort
- 3- Ascertainment of exposure
- 4- Demonstration that outcome of interest was not present at start of study

Comparability of cohorts on the basis of the design or analysis controlled for confounders

- 1- The study controls for age, sex and marital status
- 2- Study controls for other factors

Outcome

- 1- Assessment of outcome
- 2- Was follow-up long enough for outcomes to occur? Minimum of 5 years
- 3- Adequacy of follow-up of cohorts

According to the total score, the Newcastle-Ottawa scales was then expressed as good, intermediate, or poor quality study:

- Good quality: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain (total score 7 to 9)
- Fair quality: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain (total score 6)
- Poor quality: 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in outcome/exposure domain (total score 4 to 5)

Supplementary Table S4. Comparison of baseline conditions of patients undergoing bariatric surgery (BS) and controls in the ten studies included in this meta-analysis.

	BS patients	Control patients	p
Number	22831	38366	
% women	72.1±11.88	70.9±11.95	NS
Age (years)	49.0±4.68	49.2±5.25	NS
BMI (kg/m ²)	43.7±2.28	42.6±2.63	NS
Follow-up (years)	7.7±5.68	7.9±5.59	NS
% diabetes	47.5±36.80	46.6±38.42	NS
% hypertension	56.8±22.31	55.7±20.89	NS
% coronary heart disease	8.5±7.40	8.9±7.69	NS
% heart failure	7.1±6.14	8.8±8.16	NS
% weight loss	28.1±17.04	2.9±3.29	0.001

Absolute numbers and percentages. Mean ± SD.

BMI = body mass index; % = percentage; NS = non-significant