

# Supplementary Material

## Association Between Parkinson's Disease and Coronary Artery Disease: A Systematic Review and Meta-Analysis

### Supplementary Material 1. Database search strategy.

#### PubMed search

((heart failure) OR (acute coronary syndrome) OR (Coronary artery disease) OR (Coronary heart disease) OR (myocardial ischemia [MeSH Terms]) OR (Cardiovascular Disease[MeSH Terms]) OR (Comorbidity[MeSH Terms]) AND ((fft[Filter]) AND (humans[Filter]))) AND ((parkinson's) OR (parkinson's disease[MeSH Terms]) AND ((fft[Filter]) AND (humans[Filter]))) AND (((epidemiological studies[MeSH Terms]) OR (cohort studies[MeSH Terms])) OR (case control studies[MeSH Terms])) OR (observational studies) AND ((fft[Filter]) AND (humans[Filter])))

#### Web of Science search

##### - Search chain:

Step 1: Coronary artery disease (Topic) OR Coronary heart disease (Topic) Heart Failure (Topic) OR Acute Coronary Syndrome (Topic) OR Myocardial Ischemia (Topic) OR Cardiovascular Disease (Topic) OR Comorbidity (Topic)

Step 2: Parkinson's disease (Topic) OR Parkinson's (Topic)

Step 3: Epidemiological study (Topic) OR Cohort Studies (Topic) OR Case-Control Studies (Topic) OR Observational Studies (Topic)

- Search: 1 AND 2 AND 3

- Filters: English

- Date range: 2010 – 1 August 2021

#### EMBASE search

- Search chain: ('coronary artery disease' OR 'coronary heart disease' OR 'heart failure' OR 'acute coronary syndrome' OR 'myocardial ischemia' OR 'cardiovascular disease' OR 'comorbidity') AND ('parkinson's disease' OR 'parkinson's') AND ('epidemiological studies' OR 'cohort studies' OR 'case-control studies' OR 'observational studies')

- Date range: 2010-2021

-Filters: English, Human

**Supplementary Material 2.** Risk of Bias (RoB) Analysis was conducted using the Newcastle Ottawa Scale

The Newcastle Ottawa Scale (NOS) uses a 9-point scale that is divided into three categories to assess study quality as shown below:

1. Study selection: 4 points
2. Comparability: 2 points
3. Outcome/ Exposure: 3 points

The details of the NOS scale criteria and its use in RoB analysis are summarized in a recent study [1].

The selected studies were classified into ‘Good’, ‘Fair’ or ‘Poor’ quality respectively based on the Agency for Healthcare Research and Quality (AHRQ) standards derived from the NOS scores based on the following criteria:

1. Good: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain.
2. Fair: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain.
3. Poor: 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in outcome/exposure domain

## REFERENCE

- [1] Luchini C, Stubbs B, Solmi M, Veronese N (2017) Assessing the quality of studies in meta-analyses: Advantages and limitations of the Newcastle Ottawa Scale. *World J Meta-Anal* **5**, 80.

**Supplementary Table 1.** Reasons for studies retrieved for eligibility assessment but excluded for primary analysis.

Author	Reasons for rejection
Müller, 2018	Studied impact of cardiovascular risk factors and PD instead of CAD
Kotagal, 2018	Studied impact of cardiovascular risk factors and PD instead of CAD
Vikdahl, 2015	Studied impact of cardiovascular risk factors and PD instead of CAD
Markó-Kucsera, 2018	Studied impact of cardiovascular risk factors and PD instead of CAD
Driver-Dunckley, 2019	Studied impact of cardiovascular risk factors and PD instead of CAD
Kotagal, 2014	Studied impact of cardiovascular risk factors and PD instead of CAD
Kizza, 2019	Studied impact of cardiovascular risk factors and PD instead of CAD
Driver-Dunckley, 2018	Studied impact of cardiovascular risk factors and PD instead of CAD
King, 2014	Studied impact of PD on other outcomes other than CAD
Lubomski, 2015	Studied impact of PD on other outcomes other than CAD
Macleod, 2016	Studied impact of PD on other outcomes other than CAD
Bhattacharjee, 2013	Studied impact of PD on other outcomes other than CAD
Santos, 2017	Studied impact of PD on other outcomes other than CAD
Skeie, 2013	Studied impact of PD on other outcomes other than CAD
Pupillo, 2016	Studied impact of PD on other outcomes other than CAD
Potashkin, 2020	Studied impact of PD on other outcomes other than CAD
Verma, 2017	Studied impact of PD on other outcomes other than CAD
Yoon, 2021	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Pinter, 2015	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Podosa, 2011	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Matsumoto, 2014	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Duarte, 2013	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Hobson, 2018	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Nejm, 2019	Studied prevalence of CAD as a cause of mortality in PD instead of prevalence among general PD population
Braga, 2014	Studied prevalence of CAD as a reason for hospitalization instead of prevalence among general PD population
Huang, 2019	Studied PD patients excluding PD patients with a history of stroke instead of a more representative general PD population
Huang, 2013	Studied PD patients excluding PD patients with a history of stroke instead of a more representative general PD population
Wang, 2017	Studied co-morbidity in PD patients and Patients with Parkinsonism instead of a non-PD control group
Xu, 2018	Studied co-morbidity in PD patients compared with a hospitalized patient control group
Abugroun, 2020	Studied co-morbidity in PD patients compared with a hospitalized patient control group
Alves, 2020	Secondary Analysis
Okunoye, 2020	Secondary Analysis
Hong, 2018	Secondary Analysis
Scorza, 2018	Secondary Analysis

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Pezzoli, 2015	Studied impact of Endothelial progenitor cells on risk of cardiovascular disease in PD
Bao, 2018	Studied impact of serum lipid levels on risk of coronary heart disease in PD

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