Supplementary data

Item 1. Search Strategy

Search term for OVID Medline

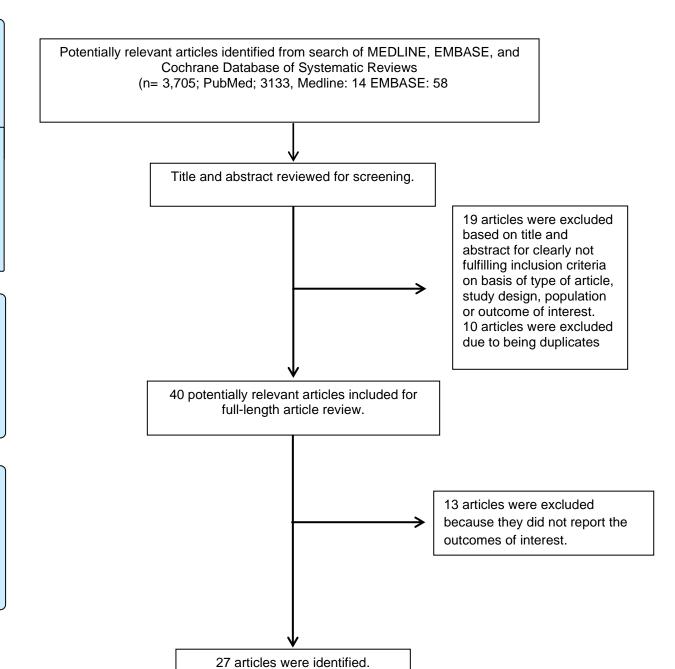
- 1. exp Coronavirus Infections/ or COVID.mp.
- 2. limit 1 to humans
- 3. exp Myocardial Ischemia/ or myocardial.mp.
- **4.** 1 and 3

Search terms for EMBASE

No.	Query
#13	#11 AND 2020:py AND 'coronavirus infection'/dm
#12	#11 AND 2020:py
#11	#1 AND #10
#10	#2 OR #9
#9	#5 OR #8
#8	#4 AND #7
#7	#3 OR #6
#6	myocardial
#5	troponin
#4	injury
#3	cardiac
#2	clinical
#1	'covid' OR 'corona'

Database: PubMed

("COVID" OR "corona") AND ("clinical" OR "myocardial" OR "cardiac" OR "injury")



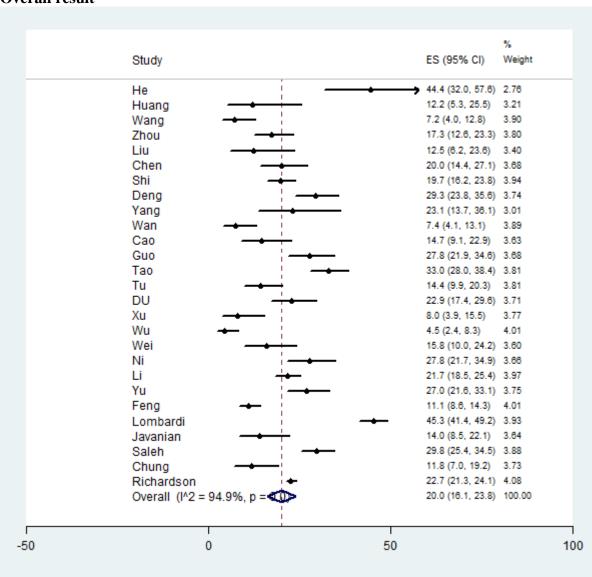
Supplement Table 1: Newcastle-Ottawa quality assessment scale of included studies in metaanalysis

Notes: The Newcastle-Ottawa scale uses a star system (0 to 9) to evaluate included studies on 3 domains: selection, comparability, and outcomes. Star (*)= item presents. Maximum 1 star (*) for selection and outcome components and 2 stars (**) for comparability components. Higher scores represent higher study quality.

Study	Selection			Comparabil Outcome ity			Total		
	Representative of exposed cohort	Selection of the non-exposed cohort	Ascertainm ent of exposure	Endpoint not present at start	Comparabil ity (Confoundi ng)	Assessm ent of Outcome	Follow- up duration	Adequac y follow- up	
He ¹	*	*	*	*		*		*	6
Huang ²	*	*	*	*	*	*	*	*	8
Wang ³	*	*	*	*	*	*		*	7
Zhou ⁴	*	*	*	*	*	*	*	*	8
Liu ⁵	*	*	*	*	*	*			5
Chen ⁶	*	*	*	*		*		*	6
Shi ⁷	*	**	*	*		*		*	6
Deng ⁸	*	*	*	*		*		*	6
Yang ⁹	*	**	*	*		*			5
Wan ¹⁰	*	*	*	*		*		*	6
Cao ¹¹	*	**	*	*		*			5
Guo ¹²	*	**	*	*		*	*	*	7
Tao ¹³	*	*	*	*		*			5
Tu ¹⁴	*	*	*	*		*			5
Du ¹⁵	*	*	*	*	*	*		*	6
Xu ¹⁶	*	*	*	*	*	*		*	6
Wu ¹⁷	*	*	*	*	*	*		*	6
Wei ¹⁸	*	*	*	*		*			5
Ni ¹⁹	*	*	*	*	*	*		*	6
Li ²⁰	*	*	*	*	*	*		*	6
Yu ²¹	*	*	*	*	*	*			5
Feng ²²	*	*	*	*	*	*			6
Lomba rdi ²³	*	*	*	*	*	*	*	*	8
Javani an ²⁴	*	*	*	*		*			5
Saleh ²⁵	*	*	*	*		*			5

Chung ²	*	*	*	*		*			5
Richar dson ²⁷	*	*	*	*	*	*	*	*	8

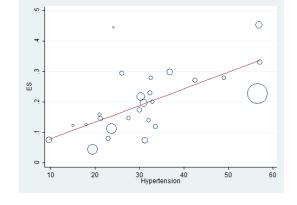
Overall result



Meta-regression

By hypertension

.. metareg _ES hypertension, wsse(_seES) graph

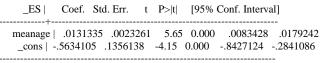


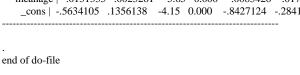
end of do-file

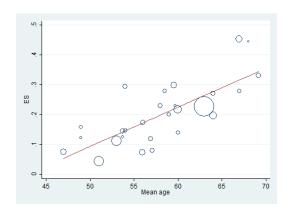
By sex (Male)

By age

.. metareg _ES meanage, wsse(_seES) graph







```
.. metareg _ES sexmale, wsse(_seES) graph
```

```
_ES | Coef. Std. Err. t P>|t| [95% Conf. Interval]

sexmale | .0050751 .0023335 2.17 0.040 .0002479 .0099024

_cons | -.0929421 .13121 -0.71 0.486 -.3643706 .1784865
```

end of do-file

. do "C:\Users\narut\AppData\Local\Temp\STD00000000.tmp"

By diabetes

. . metareg _ES dm, wsse(_seES) graph

		Std. Err.				val]
dm	.0062494	.0020571 .0398137	3.04	0.006	.0020128	

. end of do-file

. do "C:\Users\narut\AppData\Local\Temp\STD00000000.tmp"

By coronary heart disease

.. metareg _ES chd, wsse(_seES) graph

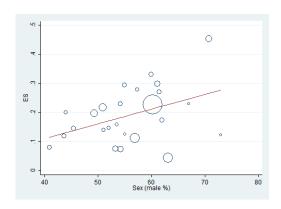
Meta-regression	Number of	obs =	27
REML estimate of between-study varia	nce	tau2	=.007611
% residual variation due to heterogenei	ty I-s	squared_re	es = 92.60%
Proportion of between-study variance e	xplained	Adj R-se	quared = 21.50%
With Knapp-Hartung modification			

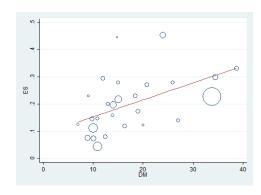
		Std. Err.					val]
cvd	.0066804	.0027627	2	2.42	0.023	.0009905	.0123703 .1983908

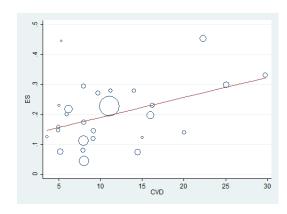
end of do-file

. do "C:\Users\narut\AppData\Local\Temp\STD00000000.tmp"

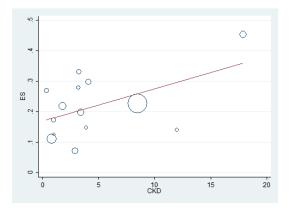
By CKD







.. metareg _ES ckd, wsse(_seES) graph



By region

. . metareg _ES nation, wsse(_seES) graph

_ES						Conf. Inter	 val]
nation	.0269995	.0255686	,	1.06	0.301	0256601 .0841164	

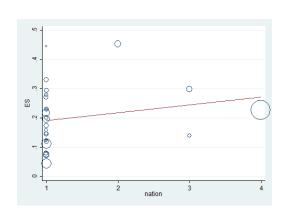
end of do-file

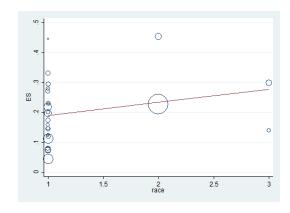
. do "C:\Users\narut\AppData\Local\Temp\STD000000000.tmp"

By race

. . metareg _ES race, wsse(_seES) graph

		Std. Err.			% Conf. Inte	rval]
race	.0436455	.034542	1.26	0.218	0274951 .049625	





References

- 1. He XW, Lai JS, Cheng J, et al. [Impact of complicated myocardial injury on the clinical outcome of severe or critically ill COVID-19 patients]. *Zhonghua Xin Xue Guan Bing Za Zhi*. 2020;48(6):456-460.
- 2. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497-506.
- 3. Wang D, Hu B, Hu C, et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA*. 2020;323(11):1061-1069.
- 4. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020;395(10229):1054-1062.
- 5. Liu K, Chen Y, Lin R, Han K. Clinical features of COVID-19 in elderly patients: A comparison with young and middle-aged patients. *J Infect*. 2020;80(6):e14-e18.
- 6. Chen C, Chen C, Yan JT, Zhou N, Zhao JP, Wang DW. [Analysis of myocardial injury in patients with COVID-19 and association between concomitant cardiovascular diseases and severity of COVID-19]. *Zhonghua Xin Xue Guan Bing Za Zhi*. 2020;48(7):567-571.
- 7. Shi S, Qin M, Shen B, et al. Association of Cardiac Injury With Mortality in Hospitalized Patients With COVID-19 in Wuhan, China. *JAMA Cardiol*. 2020;5(7):802-810.
- 8. Deng Y, Liu W, Liu K, et al. Clinical characteristics of fatal and recovered cases of coronavirus disease 2019 in Wuhan, China: a retrospective study. *Chin Med J (Engl)*. 2020;133(11):1261-1267.
- 9. Yang X, Yu Y, Xu J, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. *Lancet Respir Med.* 2020;8(5):475-481.
- 10. Wan S, Xiang Y, Fang W, et al. Clinical features and treatment of COVID-19 patients in northeast Chongqing. *J Med Virol*. 2020;92(7):797-806.
- 11. Cao J, Hu X, Cheng W, Yu L, Tu WJ, Liu Q. Clinical features and short-term outcomes of 18 patients with corona virus disease 2019 in intensive care unit. *Intensive Care Med.* 2020;46(5):851-853.
- 12. Guo T, Fan Y, Chen M, et al. Cardiovascular Implications of Fatal Outcomes of Patients With Coronavirus Disease 2019 (COVID-19). *JAMA Cardiol*. 2020;5(7):811-818.
- 13. Li T, Lu L, Zhang W, et al. Clinical characteristics of 312 hospitalized older patients with COVID-19 in Wuhan, China. *Arch Gerontol Geriatr.* 2020;91:104185.
- 14. Tu WJ, Cao J, Yu L, Hu X, Liu Q. Clinicolaboratory study of 25 fatal cases of COVID-19 in Wuhan. *Intensive Care Med.* 2020;46(6):1117-1120.
- 15. Du RH, Liang LR, Yang CQ, et al. Predictors of mortality for patients with COVID-19 pneumonia caused by SARS-CoV-2: a prospective cohort study. *Eur Respir J*. 2020;55(5).
- 16. Xu X, Yu MQ, Shen Q, et al. Analysis of inflammatory parameters and disease severity for 88 hospitalized COVID-19 patients in Wuhan, China. *Int J Med Sci.* 2020;17(13):2052-2062.
- 17. Wu C, Chen X, Cai Y, et al. Risk Factors Associated With Acute Respiratory Distress Syndrome and Death in Patients With Coronavirus Disease 2019 Pneumonia in Wuhan, China. *JAMA Intern Med.* 2020;180(7):934-943.

- 18. Wei JF, Huang FY, Xiong TY, et al. Acute myocardial injury is common in patients with COVID-19 and impairs their prognosis. *Heart.* 2020;106(15):1154-1159.
- 19. Ni W, Yang X, Liu J, et al. Acute Myocardial Injury at Hospital Admission Is Associated With All-Cause Mortality in COVID-19. *J Am Coll Cardiol*. 2020;76(1):124-125.
- 20. Li X, Xu S, Yu M, et al. Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan. *J Allergy Clin Immunol*. 2020;146(1):110-118.
- 21. Yu Y, Xu D, Fu S, et al. Patients with COVID-19 in 19 ICUs in Wuhan, China: a cross-sectional study. *Crit Care*. 2020;24(1):219.
- 22. Feng Y, Ling Y, Bai T, et al. COVID-19 with Different Severities: A Multicenter Study of Clinical Features. *Am J Respir Crit Care Med.* 2020;201(11):1380-1388.
- 23. Lombardi CM, Carubelli V, Iorio A, et al. Association of Troponin Levels With Mortality in Italian Patients Hospitalized With Coronavirus Disease 2019: Results of a Multicenter Study. *JAMA Cardiol*. 2020.
- 24. Javanian M, Bayani M, Shokri M, et al. Clinical and laboratory findings from patients with COVID-19 pneumonia in Babol North of Iran: a retrospective cohort study. *Rom J Intern Med.* 2020;58(3):161-167.
- 25. Karbalai Saleh S, Oraii A, Soleimani A, et al. The association between cardiac injury and outcomes in hospitalized patients with COVID-19. *Intern Emerg Med.* 2020.
- 26. Chung SM, Ahn JH, Moon JS. Response: The Risk of Diabetes on Clinical Outcomes in Patients with Coronavirus Disease 2019: A Retrospective Cohort Study (Diabetes Metab J 2020;44:405-13). *Diabetes Metab J*. 2020;44(4):625-626.
- 27. Richardson S, Hirsch JS, Narasimhan M, et al. Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. *JAMA*. 2020;323(20):2052-2059.