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LAMPIRAN

Persetujuan kelayakan etik untuk tinjauan sistematik ini tidak diperlukan karena menggunakan data anonim yang sudah dipublikasikan, dan tersedia untuk diunduh.

Pencarian artikel penelitian dengan google scholar dan PubMed

Analisis Primer

Population : Penelitian dengan subjek pasien usia ≥ 35 tahun yang didiagnosis PPOK eksaserbasi dengan komorbid hipertensi pulmoner

Exposura : Pasien dengan hipertensi pulmoner

Comparator : Tidak ada

Outcoma : Prevalens PPOK eksaserbasi dengan komorbid hipertensi pulmoner

Lampiran 1.

Strategi pencarian artikel yang telah dilakukan inklusi dan eksklusi

NO	Penulis, tahun	Studi desain	Total populasi PPOK dengan hipertensi pulmoner	Total populasi PPOK eksaserbasi	Total populasi PPOK eksaserbasi dengan hipertensi pulmoner	SUB GRUP		Usia, tahun (mean±SD)		jenis kelamin		merokok	Derajat/kategori PPOK				Hasil ekokardio grafi	Gagal jantung	Catatan
						periode waktu	WHO Region (asia, afrika, eropa, amerika utara, atau amerika selatan)	laki-laki	perempuan	GOLD I	GOLD II		GOLD III	GOLD IV					
1	Janne Mykland Hilde, et al. 2013	retrospektif	26	N/A	N/A	2006-2010	Eropa	Non PH: 64±6	PH: 62±8	95	3	63	0	37	31	30	N/A	N/A	kriteria inklusi: bebas eksaserbasi 2 bulan sebelum jd responden . Dan hanya konfirmasi GOLD II-IV dilakukan ekokardio grafi rest dan exercise namun tidak ada perjabaran hasil
2	David A. McAllister, et al. 2012	kohort	N/A	242	N/A	N/A	Eropa	69±9		108	134	115	10	59	65	62	N/A	N/A	
3	Judith Hurdman, et al. 2013	retrospektif	101	N/A	N/A	2001-2010	Eropa	COPD mean PAP 25-39 mmHg 67±11	COPD mean PAP >40 mmHg 70±9	25	76	32	N/A	N/A	N/A	N/A	N/A	N/A	
4	Michela Bellocchia, et al. 2013	retrospektif	25	N/A	N/A	2011-2012	Eropa	69 ± 0.9		78	51	72	bronkitis kronis:30, emfisema : 1	bronkitis kronis: 44, emfise ma: 8	bronkitis kronis: 19, emfise ma: 13	bronkitis kronis: 9, emfise ma: 5	N/A	N/A	bebas eksaserbasi 2 bulan sebelum jadi responden .ppok diklasifikasi menjadi bronkitis konis dan emfisema

14	Mireia ralu-Callado, et al. 2015	kohort	N/A	N/A	N/A	2009-2013	Eropa	64.1 ± 10.8	25,142	24,144	13,55	N/A	N/A	N/A	N/A	N/A	N/A	total populasi PPOK: 49.286 GOLD dibagi menjadi GOLD A/B dan GOLD C/D	http://
15	Karina Portillo, et al. 2015	retrospek tif	25	N/A	N/A	N/A	Eropa	63±8	134	5	0	0	46	56	37	N/A		http://	
16	Marcelo Fouad rabah, et al.2015	retrospek tif	N/A	233	N/A	2011-2012	Amerika Selatan	68.2±7.8	22	19	12	N/A	N/A	N/A	N/A	N/A	N/A	http://	
17	Izabella Uchmanowicz, et al. 2016	kohort	N/A	102	N/A	2014-2015	Eropa	63.2±6.5	64	38	N/A	3	38	53	8	N/A	N/A	http://	
18	Katsuhiko Yoshimura, et al. 2016	retrospek tif	N/A	26	N/A	2007-2013	Asia	77.0 (55-89)	79	2	55	N/A	N/A	N/A	N/A	N/A	N/A	http://	
19	Hye Sook Choi, et al. 2019	retrospek tif	N/A	N/A	N/A	2007-2012	Asia	64.6±9.9	1566	598	1504	N/A	N/A	N/A	N/A	N/A	N/A	http://	
20	Mabrouk Bahloul, et al. 2014	retrospek tif	N/A	131	48	2009-2014	Afrika	68.6 ± 9.2	118	13	N/A	N/A	N/A	N/A	N/A	N/A	46	doi:	
21	Canan Gunduz, et al. 2016	retrospek tif	N/A	N/A	N/A	2010-2013	China	67.7 ± 8.5	41	4	10	N/A	N/A	N/A	N/A	N/A	N/A	bebas eksaserbasi 4 minggu sampai menjadi responden	doi:
22	Selda Telo, et al. 2016	retrospek tif	40	N/A	N/A	N/A	Asia	69.21 ± 10.62	65	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	doi:	
23	Ula Chetty, et al. 2017	cross sectional	N/A	N/A	N/A	2007	Eropa	65.1 ± 14.5	24077	27851	N/A	N/A	N/A	N/A	N/A	N/A	3344	https	
24	Charlotte U. Andersen, et al. 2012	kohort	N/A	117	16	2008-2011	Eropa	25 ± 0.6	56	61	N/A	2	30	44	25	N/A	6	doi:	
25	Laith Alkukhun, et al. 2014	retrospek tif	90	N/A	N/A	2004-2011	Amerika Utara	59 ± 7	84	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	LVEF: 57 RVSP: 43.6 TAPSE 1.7 Disfungsi RV: 31 Dilatasi RV: 42	doi:
26	Ning Wan, et al. 2022	retrospek tif	N/A	527	181	2019-2020	China	73.00 [68.00-81.00]	116	65	N/A	41	25	25	90	N/A	N/A	PAD: 22 ; TRV 3.2 ; LVD: 44 ; RVD:22 ; LAD: 32	https
27	Isabel Blanco, et al. 2020	cross sectional	65	N/A	N/A	N/A	Eropa	67 ± 8	155	19	172	6	54	68	46	sPAP: 46 [41; 50]	N/A	https 015	
28	Gae Ile Dauriat, et al. 2021	kohort	N/A	41	41	2012-2016	Eropa	66.0 [62.0-72.0]	82	17	94	N/A	N/A	29	18	N/A	N/A	https 021	

29	Funda Aksu, et al. 2013	retrospektif	21	N/A	N/A	2008-2009	Asia	60.6±8.5		77	12	26	10	43	26	10	LVEF: 61.3±6.1 sPAP: 28.8±12.1	N/A		doi: 1439
30	Daniela GOLOGAN U, et al. 2013	retrospektif	19	N/A	N/A	2011-2012	Eropa	non PH: 65.1	PH: 68.1	25	6	N/A	1	10	8	12	LVEF: 55 ± 5; sPAP: 35 ± 10; TAPSE: 24 ± 5; RVH: 0; RVD: 16,1%	N/A		
31	Shingo Nakayama, et al. 2020	retrospektif	40	N/A	N/A	2010-2012	Asia	non pH: 58.7 ± 9.8	PH: 75.5 (71.3–80.0)	160	31	17	73	139	65	21	N/A	N/A	Usia: mean (min-max)	http:
32	Don Hayes Jr, et al. 2016	retrospektif	652	N/A	N/A	2005-2013	Eropa	59.14 ± 6.48		483	761	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	https: 0434
33	Abubakr A. Bajwa, et al. 2017	kohort	N/A	N/A	N/A	N/A	Amerika Serikat	65 (56–80)		5	4	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	doi:
34	Gae'l Dournes, et al. 2014	retrospektif	34	N/A	N/A	2010-2014	Eropa	non pH: 58.7 ± 9.8	PH: 63.2 ± 11.9	44	16	N/A	N/A	N/A	N/A	N/A	N/A	LVEF: 61.8 ± 8.6 PH: 63.3 ± 6.6		doi:
35	YOSHIO NAKAHARA, et al. 2016	retrospektif	N/A	N/A	N/A	2007-2013	Asia	69.9 ± 6.8					N/A	N/A	N/A	N/A	N/A		37	doi:
36	Mizuha Haraguchi, et al. 2016	kohort	N/A	N/A	N/A	2009	Asia	72.6 ± 8.2		406	37	93	59	202	115	33	N/A	N/A		10.1
37	Mitra Samareh Fekri, et al. 2017	Retrospektif	N/A	1078	990	2014-2015	Asia	70.14 ± 12.26		628	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	http: 014

Lampiran 2.

Pencarian artikel yang telah didapatkan eligibilitas

Artikel yang Termasuk Eligibilitas

No	Judul	Penulis, Tahun	Desain Studi	Prevalence rate PPOK-PH	Hipertensi pulmoner	PPOK	Usia	Jenis Kelamin	Merokok	Ekokardiografi	Gagal Jantung kanan	Keterangan	Keyword
1	Haemodynamic responses to exercise in patients with COPD	Janne Mykland Hilde, et al. 2013	retrospektif									doi: 10.1183/09031936.00085612	Pre-capillary, pre-circulation, right f
2	Diagnosis of myocardial infarction following hospitalisation for exacerbation of COPD	David A. McAllister, et al. 2012	kohort									doi: 10.1183/09031936.00124811	Chest pain, chronic disease, ECG, m troponin
3	Pulmonary hypertension in COPD: results from the ASPIRE registry	Judith Hurdman, et al. 2013	retrospektif									doi: 10.1183/09031936.00079512	Chronic obstructi computed tomog prognosis, pulmo respiratory functi
4	Predictors of cardiovascular disease in asthma and chronic obstructive pulmonary disease	Michela Bellocchia, et al. 2013	retrospektif									doi: 10.1186/2049-6958-8-58	Airway obstructio disease, COPD, Volume overload
5	Atrial fibrillation in the acute, hypercapnic exacerbations of COPD	C. Terzano, et al. 2014	kohort										Chronic obstructi Hypercapnia, Atrial fibrillation, artery pressure
6	Pulmonary Arterial Hypertension-Specific Drug Therapy in COPD Patients with Severe Pulmonary Hypertension and Mild-to-Moderate Airflow Limitation	George Calcaianu, et al. 2016	retrospektif									doi: 10.1159/000441304	Chronic obstructi Severe pulmonar hypoxemia, Pulmo vasodilators, FEV

7	Admission for COPD Exacerbation Is Associated with the Clinical Diagnosis of Pulmonary Hypertension: Results from a Retrospective Longitudinal Study of a Veteran Population	Sarah K. Medrek, et al. 2017	retrospektif								http://dx.doi.org/10.1080/15412555.2017.1336209	Chronic obstructive pulmonary hyper
8	Prophylactic function of excellent compliance with LTOT in the development of pulmonary hypertension due to COPD with hypoxemia	Wei Xiong, et al. 2018	retrospektif								doi: 10.1177/2045894018765835	COPD, pulmonary hypoxemia, LTO
9	Impact of pulmonary hypertension in patients with acute exacerbation of chronic obstructive pulmonary disease and its effect on healthcare utilization	Rezwan F. Munshi, et al. 2021	kohort								doi: 10.1177/20458940211046838	acutely exacerbate pulmonary disease; hypertension, chronic pulmonary disease; hypoxia
10	Chronic Obstructive Pulmonary Disease with Incidence of Heart Failure and Its Influencing Factors	Andry Wahyudi Agus, et al. 2022	retrospektif								doi: 10.20473/jr.v8-l.1.2022.7-14	COPD, Echocardiography, Heart failure, Human & medical hypertension.
11	Early and Long-term Outcomes of Older Adults after Acute Care Encounters for Chronic Obstructive Pulmonary Disease Exacerbation	Liza Genao, et al. 2015	retrospektif								doi: 10.1513/AnnalsATS.201504-250OC	health outcomes; pulmonary disease
12	Impact of obstructive sleep apnea on pulmonary hypertension in patients with chronic obstructive pulmonary disease	Wan-Lu Sun, et al. 2019	retrospektif								doi: 10.1097/CM9.0000000000000247	Chronic obstructive pulmonary disease; Echocardiography; obstructive sleep apnea; Pulmonary hypertension

13	Chronic obstructive pulmonary disease as a cardiovascular risk factor. Results of a case-control study (CONSISTE study)	Pilar de Lucas-Ramos, et al. 2012	retrospektif									http://dx.doi.org/10.2147/COPD.S36222	COPD, cardiovascular disease
14	epidemiology, severity, and treatment of chronic obstructive pulmonary disease in the United Kingdom by gO2D 2013	Mireia raluy-Callado, et al. 2015	kohort									http://dx.doi.org/10.2147/COPD.S82064	COPD, prevalence primary care man
15	Pulmonary hemodynamic profile in chronic obstructive pulmonary disease	Karina Portillo, et al. 2015	retrospektif									http://dx.doi.org/10.2147/COPD.S78180	pulmonary hyper catheterization, c
16	Prevalence of chronic obstructive pulmonary disease among patients with systemic arterial hypertension without respiratory symptoms	Marcelo Fouad rabah, et al.2015	retrospektif									http://dx.doi.org/10.2147/COPD.S85588	COPD, hypertens
17	assessment of illness acceptance by patients with COPD and the prevalence of depression and anxiety in COPD	Izabella Uchmanowicz, et al. 2016	kohort									http://dx.doi.org/10.2147/COPD.S102754	COPD, depression illness
18	Morphological changes in small pulmonary vessels are associated with severe acute exacerbation in chronic obstructive pulmonary disease	Katsuhiro Yoshimura, et al. 2016	retrospektif									http://dx.doi.org/10.2147/COPD.S102754	chronic obstructive (COPD), acute e vessels, cross-se computed tomog

19	Metabolic Syndrome in Early Chronic Obstructive Pulmonary Disease: Gender Differences and Impact on Exacerbation and Medical Costs	Hye Sook Choi, et al. 2019	retrospektif								http://doi.org/10.2147/COPD.S228497	COPD exacerbat
20	Incidence and impact outcome of pulmonary embolism in critically ill patients with severe exacerbation of chronic obstructive pulmonary diseases	Mabrouk Bahloul, et al. 2014	retrospektif								doi: 10.1111/crj.12131	chronic obstructiv ICU – outcome –
21	Prevalence of overlap syndrome in chronic obstructive pulmonary disease patients without sleep apnea symptoms	Canan Gunduz, et al. 2016	retrospektif								doi: 10.1111/crj.12493	chronic obstructiv hypoxemia – obe apnea – overlap
22	Can ADMA play a role in determining pulmonary hypertension related to chronic obstructive pulmonary disease?	Selda Telo, et al. 2016	retrospektif								doi: 10.1111/crj.12675	asymmetric dime echocardiograph
23	Chronic obstructive pulmonary disease and comorbidities: a large cross-sectional study in primary care	Ula Chetty, et al. 2017	retrospektif								https://doi.org/10.3399/bjgp.17X690605	comorbidity; COP multimorbidity; pr
24	Echocardiographic Screening for Pulmonary Hypertension in Stable COPD Out-Patients and NT-proBNP as a Rule-Out Test	Charlotte U. Andersen, et al. 2012	kohort								doi: 10.3109/15412555.2012.695818	biomarkers, BNP mortality, 6-six m

25	Electrocardiographic Differences between COPD Patients Evaluated for Lung Transplantation With and without Pulmonary Hypertension	Laith Alkukhun, et al. 2014	retrospektif								doi: 10.3109/15412555.2014.898047	Chronic obstructive pulmonary hyper
26	A nomogram for predicting the risk of Pulmonary Hypertension for Patients with Chronic Obstructive Pulmonary Disease	Ning Wan, et al. 2022	retrospektif								https://doi.org/10.2147/IJG.M.S363035	chronic obstructive pulmonary hyper LASSO regressio
27	Effects of Pulmonary Hypertension on Exercise Capacity in Patients With Chronic Obstructive Pulmonary Disease	Isabel Blanco, et al. 2020	retrospektif								https://doi.org/10.1016/j.arbres.2019.10.015	Pulmonary hyper Chronic obstructive Exercise toleranc Cardiopulmonary walk test
28	Severe pulmonary hypertension associated with chronic obstructive pulmonary disease A prospective French multicenter cohort	Gae'le Dauriat, et al. 2021	kohort								https://doi.org/10.1016/j.healun.2021.04.021	chronic obstructive pulmonary hyper transplantation
29	C-reactive protein levels are raised in stable Chronic obstructive pulmonary disease patients independent of smoking behavior and biomass exposure	Funda Aksu, et al. 2013	retrospektif								doi: 10.3978/j.issn.2072-1439.2013.06.27	severity, concom hypertension and Biomass; C-reactive obstructive pulmonary artery behaviour
30	Prevalence and Characteristics of Pulmonary Hypertension Associated with COPD - A Pilot Study in Patients Referred to a Pulmonary Rehabilitation Program Clinic	Daniela GOLOGANU, et al. 2013	retrospektif									pulmonary hyper obstructive pulmo echocardiograph

31	Characteristics of chronic obstructive Pulmonary Disease Patients with Pulmonary Hypertension Assessed by Echocardiography in a Three-Year Observational Cohort Study	Shingo Nakayama, et al. 2020	retrospektif									http://doi.org/10.2147/COPD.S230952	comorbidity, COPD, pulmonary hypertension
32	Prevalence of Pulmonary Hypertension and its Influence on Survival in Patients With Advanced Chronic Obstructive Pulmonary Disease Prior to Lung Transplantation	Don Hayes Jr, et al. 2016	retrospektif									https://doi.org/10.3109/15412555.2015.1043425	chronic obstructive pulmonary disease, lung transplantation, hypertension, survival
33	The safety and tolerability of inhaled treprostinil in patients with pulmonary hypertension and chronic obstructive pulmonary disease	Abubakr A. Bajwa, et al. 2017	kohort									doi: 10.1086/689291	pulmonary hypertension, chronic obstructive pulmonary disease, inhaled treprostinil
34	Computed Tomographic Measurement of Airway Remodeling and Emphysema in Advanced Chronic Obstructive Pulmonary Disease Correlation with Pulmonary Hypertension	Gae'l Dournes, et al. 2014	retrospektif									doi: 10.1164/rccm.201408-1423OC	COPD; CT; pulmonary hypertension; remodeling
35	Exercise hypoxaemia as a predictor of pulmonary hypertension in COPD patients without severe resting hypoxaemia	YOSHIO NAKAHARA, et al. 2016	retrospektif									doi: 10.1111/resp.12863	chronic obstructive pulmonary disease, exercise, pulmonary hypertension, hypoxaemia
36	Determinants of chronic obstructive pulmonary disease severity in the late-elderly differ from those in younger patients	Mizuha Haraguchi, et al. 2016	kohort									10.1186/s13104-015-1810-8	Chronic obstructive pulmonary disease, Comorbidity, Elderly, Emphysema

37	Prevalence and predictors associated with severe pulmonary hypertension in COPD	Mitra Samareh Fekri, et al. 2017	Retrospektif									http://dx.doi.org/10.1016/j.jajem.2017.08.014	Pulmonary hypertension Body mass index
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Lampiran 3.

Artikel yang dilakukan Tinjauan Sistematis, Meta-Analysis

No	Penulis, tahun	Total populasi PPOK eksaserbasi	Total populasi PPOK eksaserbasi dengan komorbid hipertensi pulmoner	Karakteristik PPOK eksaserbasi dengan hipertensi pulmoner	
				Usia (+mean)	Laki - laki (%)
1	Sarah K. Medrek, et al. 2017	51832	2176	67,2	97,5
2	Rezwan F. Munshi, et al. 2021	627848	68429	71 ± 11.66	38,86
3	Mitra Samareh Fekri, et al. 2017	1078	990	69,24 ± 11,68	
4	Ning Wan, et al. 2022	527	181	73.00 [68.00, 81.00]	64,1
5	Charlotte U. Andersen, et al. 2012	117	16	75 ± 2	50
6	Gae'lle Dauriat, et al. 2021	41	41	66.0 [62.0-72.0]	82,8

Lampiran 4.

NEW CASTLE-OTTAWA QUALITY ASSESSMENT FORM FOR COHORT STUDIES

Note: A study can be given a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.

Selection

1. 1) Representativeness of the exposed cohort
 1. a) Truly representative (one star)
 2. b) Somewhat representative (one star)
 3. c) Selected group
 4. d) No description of the derivation of the cohort
2. 2) Selection of the non-exposed cohort
 1. a) Drawn from the same community as the exposed cohort (one star)
 2. b) Drawn from a different source
 3. c) No description of the derivation of the non exposed cohort
3. 3) Ascertainment of exposure
 1. a) Secure record (e.g., surgical record) (one star)
 2. b) Structured interview (one star)
 3. c) Written self report
 4. d) No description
 5. e) Other
4. 4) Demonstration that outcome of interest was not present at start of study

a) Yes (one star) b) No

Comparability

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

1. a) The study controls for age, sex and marital status (one star)

2. b) Study controls for other factors (list)

_____ (one star)

3. c) Cohorts are not comparable on the basis of the design or analysis controlled for confounders

Outcome

1. 1) Assessment of outcome

1. a) Independent blind assessment (one star)

2. b) Record linkage (one star)

3. c) Self report

4. d) No description

5. e) Other

2. 2) Was follow-up long enough for outcomes to occur

a) Yes (one star)

b)

No

Indicate the median duration of follow-up and a brief rationale for the assessment above: _____

3) Adequacy of follow-up of cohorts

1. a) Complete follow up- all subject accounted for (one star)
2. b) Subjects lost to follow up unlikely to introduce bias- number lost less than or equal to 20% or description of those lost

suggested no different from those followed. (one star)
3. c) Follow up rate less than 80% and no description of those lost
4. d) No statement

Thresholds for converting the Newcastle-Ottawa scales to AHRQ standards (good, fair, and poor):

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

Fair quality : 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain

Poor quality : 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in outcome/exposure domain

Lampiran 5.

NEW CASTLE OTTAWA SCALE (NOS) STUDI YANG DILAKUKAN META – ANALISIS

NO	Judul	Peneliti, Tahun	Seleksi	Komparabilitas	Luaran	Total skor	Peringkat
1	Admission for COPD Exacerbation Is Associated with the Clinical Diagnosis of Pulmonary Hypertension: Results from a Retrospective Longitudinal Study of a Veteran Population	Sarah K. Medrek, et al. 2017	****	*	**	7	Baik
2	Impact of pulmonary hypertension in patients with acute exacerbation of chronic obstructive pulmonary disease and its effect on healthcare utilization	Rezwan F. Munshi, et al. 2021	****	*	**	7	Baik
3	Prevalence and predictors associated with severe	Mitra Samareh Fekri, et al. 2017	****	*	**	7	Baik

	pulmonary hypertension in COPD						
4	A nomogram for predicting the risk of Pulmonary Hypertension for Patients with Chronic Obstructive Pulmonary Disease	Ning Wan, et al. 2022	***	*	**	6	Baik
5	Echocardiographic Screening for Pulmonary Hypertension in Stable COPD Out-Patients and NT- proBNP as a Rule-Out Test	Charlotte U. Andersen, et al. 2012	****	*	**	7	Baik
6	Severe pulmonary hypertension associated with chronic obstructive pulmonary disease A prospective French multicenter cohort	Gae'lle Dauriat, et al. 2021	***	*	**	6	Baik