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West Middlesex University Hospital

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Date: 20 March 2020
Sources Searched: Medline, Embase, PubMed.

Steroids and COVID-19

See full search strategy

1. Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury.

Author(s): Russell, Clark D; Millar, Jonathan E; Baillie, J Kenneth

Source: Lancet (London, England); Feb 2020; vol. 395 (no. 10223); p. 473-475

Publication Date: Feb 2020

Publication Type(s): Journal Article

PubMedID: 32043983

Available at Lancet (London, England) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

Available at Lancet (London, England) - from Unpaywall

Database: Medline

2. Potential benefits of precise corticosteroids therapy for severe 2019-nCoV pneumonia.

Author(s): Zhou, Wei; Liu, Yisi; Tian, Dongdong; Wang, Cheng; Wang, Sa; Cheng, Jing; Hu, Ming; Fang, Minghao; Gao, Yue

Source: Signal transduction and targeted therapy; 2020; vol. 5 ; p. 18

Publication Date: 2020

Publication Type(s): Journal Article

PubMedID: 32133159

Available at Signal transduction and targeted therapy - from Nature (Open Access)

Available at Signal transduction and targeted therapy - from ProQuest (Health Research Premium) - NHS Version

Available at Signal transduction and targeted therapy - from Unpaywall

Database: Medline

3. Effectiveness of glucocorticoid therapy in patients with severe novel coronavirus pneumonia: protocol of a randomized controlled trial

Author(s): Zhou Y.-H.; Lu Y.-Q.; He X.-Q.; Zeng Y.-M.; Xu X.-L.; Chen Y.-K.; Qin Y.-Y.; Sun F.; Yang S.; Harypursat V.; Tang S.-Q.; Huang Y.-Q.; Li Y.; Zhao T.

Source: Chinese medical journal; Mar 2020

Publication Date: Mar 2020

Publication Type(s): Article

PubMedID: 32149773

Available at Chinese medical journal - from Europe PubMed Central - Open Access

Available at Chinese medical journal - from Ovid (LWW Total Access Collection 2019 - with Neurology)

Available at Chinese medical journal - from Unpaywall

Abstract:BACKGROUND: At the end of 2019, a novel coronavirus outbreak emerged in Wuhan, China, and its causative organism has been subsequently designated the 2019 novel coronavirus (2019-nCoV). The virus has since rapidly spread to all provinces and autonomous regions of China, and to countries outside of China. Patients who become infected with 2019-nCoV may initially develop mild upper respiratory tract symptoms. However, a significant fraction of these patients goes on to subsequently develop serious lower respiratory disease. The effectiveness of adjunctive glucocorticoid therapy uses in the management of 2019-nCoV infected patients with severe lower respiratory tract infections is not clear, and warrants further investigation. METHOD(S): The present study will be conducted as an open-labelled, randomised controlled trial. We will enrol 48 subjects from Chongqing Public Health Medical Center. Each eligible subject will be assigned to an intervention group (methylprednisolone via intravenous injection at a dose of 1-2mg/kg/day for 3 days) or a control group (no glucocorticoid use) randomly, at a 1:1 ratio. Subjects in both groups will be invited for 28 days of follow-up which will be scheduled at 4 consecutive visit points. We will use the clinical improvement rate as our primary endpoint. Secondary endpoints include the timing of clinical improvement after intervention, duration of mechanical ventilation, duration of hospitalization, overall incidence of adverse events, as well as rate of adverse events at each visit, and mortality at 2 and 4 weeks. DISCUSSION: The present coronavirus outbreak is the third serious global coronavirus outbreak in the past two decades. Oral and parenteral glucocorticoids have been used in the management of severe respiratory symptoms in coronavirus-infected patients in the past. However, there remains no definitive evidence in the literature for or against the utilization of systemic glucocorticoids in seriously ill patients with coronavirus-related severe respiratory disease, or indeed in other types of severe respiratory disease. In this study, we hope to discover evidence either supporting or opposing the systemic therapeutic administration of glucocorticoids in severe coronavirus disease 2019 (COVID-19) patients. TRIAL REGISTRATION: ClinicalTrials.gov, ChiCTR2000029386, http://www.chictr.org.cn/showproj.aspx?proj=48777.

Database: EMBASE

4. On the use of corticosteroids for 2019-nCoV pneumonia.

Author(s): Shang, Lianhan; Zhao, Jianping; Hu, Yi; Du, Ronghui; Cao, Bin

Source: Lancet (London, England); Feb 2020; vol. 395 (no. 10225); p. 683-684

Publication Date: Feb 2020

Publication Type(s): Letter Comment

PubMedID: 32122468

Available at Lancet (London, England) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

Available at Lancet (London, England) - from Unpaywall

Database: Medline

5. Persistence and clearance of viral RNA in 2019 novel coronavirus disease rehabilitation patients

Author(s): Ling Y.; Tian D.; Zhu Z.-Q.; Dai F.-H.; Wu F.; Song Z.-G.; Huang W.; Lu H.-Z.; Xu S.-B.; Chen J.; Lin Y.-X.; Hu B.-J.; Wang S.; Mao E.-Q.; Zhu L.; Zhang W.-H.

Source: Chinese medical journal; Feb 2020

Publication Date: Feb 2020

Publication Type(s): Article

PubMedID: 32118639

Available at Chinese medical journal - from Europe PubMed Central - Open Access

Available at Chinese medical journal - from Ovid (LWW Total Access Collection 2019 - with Neurology)

Available at Chinese medical journal - from Unpaywall

Abstract:BACKGROUND: A patient's infectivity is determined by the presence of the virus in different body fluids, secretions, and excreta. The persistence and clearance of viral RNA from different specimens of patients with 2019 novel coronavirus disease (COVID-19) remain unclear. This study analyzed the clearance time and factors influencing 2019 novel coronavirus (2019-nCoV) RNA in different samples from patients with COVID-19, providing further evidence to improve the management of patients during convalescence. METHOD(S): The clinical data and laboratory test results of convalescent patients with COVID-19 who were admitted to from January 20, 2020 to February 10, 2020 were collected retrospectively. The reverse transcription polymerase chain reaction (RT-PCR) results for patients' oropharyngeal swab, stool, urine, and serum samples were collected and analyzed. Convalescent patients refer to recovered non-febrile patients without respiratory symptoms who had two successive (minimum 24 h sampling interval) negative RT-PCR results for viral RNA from oropharyngeal swabs. The effects of cluster of differentiation 4 (CD4)+ T lymphocytes, inflammatory indicators, and glucocorticoid treatment on viral nucleic acid clearance were analyzed. RESULT(S): In the 292 confirmed cases, 66 patients recovered after treatment and were included in our study. In total, 28 (42.4%) women and 38 men (57.6%) with a median age of 44.0 (34.0-62.0) years were analyzed. After in-hospital treatment, patients' inflammatory indicators decreased with improved clinical condition. The median time from the onset of symptoms to first negative RT-PCR results for oropharyngeal swabs in convalescent patients was 9.5 (6.0-11.0) days. By February 10, 2020, 11 convalescent patients (16.7%) still tested positive for viral RNA from stool specimens and the other 55 patients' stool specimens were negative for 2019-nCoV following a median duration of 11.0 (9.0-16.0) days after symptom onset. Among these 55 patients, 43 had a longer duration until stool specimens were negative for viral RNA than for throat swabs, with a

median delay of 2.0 (1.0-4.0) days. Results for only four (6.9%) urine samples were positive for viral nucleic acid out of 58 cases; viral RNA was still present in three patients' urine specimens after throat swabs were negative. Using a multiple linear regression model (F = 2.669, P = 0.044, and adjusted R = 0.122), the analysis showed that the CD4+ T lymphocyte count may help predict the duration of viral RNA detection in patients' stools (t = -2.699, P = 0.010). The duration of viral RNA detection from oropharyngeal swabs and fecal samples in the glucocorticoid treatment group was longer than that in the non-glucocorticoid treatment group (15 days vs. 8.0 days, respectively; t = 2.550, P = 0.013) and the duration of viral RNA detection in fecal samples in the glucocorticoid treatment group was longer than that in the non-glucocorticoid treatment group (20 days vs. 11 days, respectively; t = 4.631, P < 0.001). There was no statistically significant difference in inflammatory indicators between patients with positive fecal viral RNA test results and those with negative results (P > 0.05). CONCLUSION(S): In brief, as the clearance of viral RNA in patients' stools was delayed compared to that in oropharyngeal swabs, it is important to identify viral RNA in feces during convalescence. Because of the delayed clearance of viral RNA in the glucocorticoid treatment group, glucocorticoids are not recommended in the treatment of COVID-19, especially for mild disease. The duration of RNA detection may relate to host cell immunity.

Database: EMBASE

6. Corticosteroid Therapy for Critically Ill Patients with Middle East Respiratory Syndrome.

Author(s): Arabi, Yaseen M; Mandourah, Yasser; Al-Hameed, Fahad; Sindi, Anees A; Almekhlafi, Ghaleb A; Hussein, Mohamed A; Jose, Jesna; Pinto, Ruxandra; Al-Omari, Awad; Kharaba, Ayman; Almotairi, Abdullah; Al Khatib, Kasim; Alraddadi, Basem; Shalhoub, Sarah; Abdulmomen, Ahmed; Qushmaq, Ismael; Mady, Ahmed; Solaiman, Othman; Al-Aithan, Abdulsalam M; Al-Raddadi, Rajaa; Ragab, Ahmed; Balkhy, Hanan H; Al Harthy, Abdulrahman; Deeb, Ahmad M; Al Mutairi, Hanan; Al-Dawood, Abdulaziz; Merson, Laura; Hayden, Frederick G; Fowler, Robert A; Saudi Critical Care Trial Group

Source: American journal of respiratory and critical care medicine; Mar 2018; vol. 197 (no. 6); p. 757-767

Publication Date: Mar 2018

Publication Type(s): Multicenter Study Journal Article

PubMedID: 29161116

Available at American journal of respiratory and critical care medicine - from Free Medical Journals . com

Available at American journal of respiratory and critical care medicine - from ProQuest (Health Research Premium) - NHS Version

Available at American journal of respiratory and critical care medicine - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

Abstract:RATIONALECorticosteroid therapy is commonly used among critically ill patients with Middle East Respiratory Syndrome (MERS), but its impact on outcomes is uncertain. Analyses of observational studies often do not account for patients' clinical condition at the time of corticosteroid therapy initiation.OBJECTIVESTo investigate the association of corticosteroid therapy on mortality and on MERS coronavirus RNA clearance in critically ill patients with MERS.METHODSICU patients with MERs were included from 14 Saudi Arabian centers between September 2012 and October 2015. We performed marginal structural modeling to account for baseline and time-varying confounders.MEASUREMENTS AND MAIN RESULTSOf 309 patients, 151 received corticosteroids. Corticosteroids were initiated at a median of 3.0 days (quartile 1 [Q1]-Q3, 1.0-7.0) from ICU admission. Patients who received corticosteroids were more likely to receive invasive ventilation (141 of 151 [93.4%] vs. 121 of 158 [76.6%]; $P < 0.0001$) and had higher 90-day crude mortality (112 of 151 [74.2%] vs. 91 of 158 [57.6%]; $P = 0.002$). Using marginal structural modeling, corticosteroid therapy was not significantly associated with 90-day mortality (adjusted odds ratio, 0.75; 95% confidence interval, 0.52-1.07; $P = 0.12$) but was associated with delay in MERS coronavirus RNA clearance (adjusted hazard ratio, 0.35; 95% CI, 0.17-0.72; $P = 0.005$).CONCLUSIONSCorticosteroid therapy in patients with MERS was not associated with a difference in mortality after adjustment for time-varying confounders but was associated with delayed MERS coronavirus RNA clearance. These findings highlight the challenges and importance of adjusting for baseline and time-varying confounders when estimating clinical effects of treatments using observational studies.

Database: Medline

7. Systemic Corticosteroid Therapy May Delay Viral Clearance in Patients with Middle East Respiratory Syndrome Coronavirus Infection.

Author(s): Hui, David S

Source: American journal of respiratory and critical care medicine; Mar 2018; vol. 197 (no. 6); p. 700-701

Publication Date: Mar 2018

Publication Type(s): Editorial Comment

PubMedID: 29227752

Available at American journal of respiratory and critical care medicine - from Free Medical Journals . com

Available at American journal of respiratory and critical care medicine - from ProQuest (Health Research Premium) - NHS Version

Available at American journal of respiratory and critical care medicine - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

Database: Medline

8. The use of corticosteroid as treatment in SARS was associated with adverse outcomes: a retrospective cohort study.

Author(s): Auyeung, Tung Wai; Lee, Jenny S W; Lai, Wing Kin; Choi, Chun Hung; Lee, Hoi Kan; Lee, Joo Shim; Li, Po Chun; Lok, Ka Ho; Ng, Yuk Yung; Wong, Wai Ming; Yeung, Yiu Ming

Source: The Journal of infection; Aug 2005; vol. 51 (no. 2); p. 98-102

Publication Date: Aug 2005

Publication Type(s): Journal Article

PubMedID: 16038758

Abstract:OBJECTIVETo study the effect of corticosteroids in the treatment of severe acute respiratory syndrome (SARS).METHODSA retrospective cohort of 78 consecutive adult SARS patients admitted to a regional hospital in Hong Kong between March and May 2003 was analysed to study the effectiveness of corticosteroid. They were categorized according to whether or not corticosteroid therapy was given, and compared in terms of demographic characteristics, comorbidities, peak lactate dehydrogenase (LDH) levels and clinical outcomes. Established adverse prognostic factors including old age, comorbidities and high LDH levels were used as covariates in multiple logistic regressions to adjust for their confounding effect on adverse outcomes.RESULTSAmong 78 patients, 66 patients (84.6%) received corticosteroid. The LDH level was similar in both groups. The corticosteroid group had more adverse outcomes (37.9% vs. 16.7%) despite younger age and less comorbidity. In multivariate analysis, corticosteroid treatment was associated with a 20.7-fold increase in risk of either ICU admission or mortality, independent of age and disease severity.CONCLUSIONDespite more favourable baseline characteristics and similar peak LDH levels, SARS patients given corticosteroid had more adverse outcomes.

Database: Medline

9. Pro/con clinical debate: steroids are a key component in the treatment of SARS. Con: No, steroids are not a key component of the treatment regimen for SARS.

Author(s): Kargel, Marcus J; Lapinsky, Stephen E

Source: Critical care (London, England); Apr 2004; vol. 8 (no. 2); p. 105-107

Publication Date: Apr 2004

Publication Type(s): Journal Article Comment

PubMedID: 15515216

Available at Critical care (London, England) - from BioMed Central

Available at Critical care (London, England) - from SpringerLink - Medicine

Available at Critical care (London, England) - from Europe PubMed Central - Open Access

Available at Critical care (London, England) - from Free Medical Journals . com

Available at Critical care (London, England) - from Unpaywall

Database: Medline

Strategy 828273

#	Database	Search term	Results
1	Medline	(steroid*).ti,ab	215684
2	Medline	exp STEROIDS/	849642
3	Medline	exp "ADRENAL CORTEX HORMONES"/	393373
4	Medline	(corticosteroid*).ti,ab	99919
5	Medline	(1 OR 2 OR 3 OR 4)	1072564
6	Medline	("COVID 19").ti,ab	712
7	Medline	("COVID 2019").ti,ab	11
8	Medline	(coronavirus ADJ2 2019).ti,ab	501
9	Medline	("SARS-COV-2" OR "2019-nCoV ").ti,ab	492
10	Medline	("severe acute respiratory syndrome coronavirus 2").ti,ab	69
11	Medline	(6 OR 7 OR 8 OR 9 OR 10)	1154
12	Medline	(5 AND 11)	10
13	Medline	(coronavirus ADJ2 wuhan).ti,ab	33
14	Medline	(5 AND 13)	0
15	Medline	exp "CORONAVIRUS INFECTIONS"/	9605
16	Medline	(5 AND 15)	284
17	EMBASE	(steroid*).ti,ab	314419
18	EMBASE	(corticosteroid*).ti,ab	147687
19	EMBASE	exp STEROID/	1451022

21	EMBASE	exp CORTICOSTEROID/ OR exp "CORTICOSTEROID THERAPY"/	912302
22	EMBASE	(17 OR 18 OR 19 OR 21)	1558726
23	EMBASE	("COVID 19").ti,ab	370
24	EMBASE	("COVID 2019").ti,ab	4
25	EMBASE	(coronavirus ADJ2 2019).ti,ab	349
26	EMBASE	("SARS-COV-2" OR "2019-nCoV ").ti,ab	398
27	EMBASE	("severe acute respiratory syndrome coronavirus 2").ti,ab	33
28	EMBASE	(coronavirus ADJ2 wuhan).ti,ab	12
29	EMBASE	(23 OR 24 OR 25 OR 26 OR 27 OR 28)	749
30	EMBASE	(22 AND 29)	15
31	EMBASE	exp GLUCOCORTICOID/	698213
32	EMBASE	(29 AND 31)	9
33	Medline	(glucocorticoid*).ti,ab	66541
34	Medline	exp GLUCOCORTICOIDS/	189999
35	Medline	(33 OR 34)	223811
36	Medline	(11 AND 35)	10
37	PubMed	("COVID 19").ti,ab	879
38	PubMed	("COVID 2019").ti,ab	11
39	PubMed	("SARS-COV-2" OR "2019-nCoV ").ti,ab	572
40	PubMed	("severe acute respiratory	248

		syndrome coronavirus 2").ti,ab	
41	PubMed	(37 OR 38 OR 39 OR 40)	1142
43	PubMed	(steroid* OR glucocorticoid* OR corticosteroid* OR steroids OR glucocorticoids OR corticosteroids).ti,ab	1171648
44	PubMed	(41 AND 43)	18