

Búsqueda: COVID-19 y coagulopatías.

Criterio de búsqueda: ("sars-cov-2" or "novel coronavirus pneumonia" or "covid 19" or "covid-19"[supplementary concept] or "severe acute respiratory syndrome coronavirus 2"[supplementary concept] or "coronavirus"[mesh] or "sars virus"[mesh]) and ("fibrin fragment d"[supplementary concept] or "coagulopathy" or "blood coagulation disorders"[mesh] or "disseminated intravascular coagulation"[mesh] or "coagulation protein disorders"[mesh] or "blood coagulation disorders, inherited"[mesh] or "blood coagulability" or "fibrin fibrinogen degradation products"[mesh] or "prothrombin time"[mesh] or "tissue plasminogen activator"[mesh] or "coagulation parameter" or "d-dimer" or "fibrin degradation product" or "laboratory abnormalities")

Resultados: 25

PubMed Results

Items 1 - 25 of 25 ([Display the 25 citations in PubMed](#))

1. J Med Virol. 2020 Mar 21. doi: 10.1002/jmv.25783. [Epub ahead of print]

[Clinical Features and Treatment of COVID-19 Patients in Northeast Chongqing.](#)

[Wan S](#)¹, [Xiang Y](#)^{1,2}, [Fang W](#)¹, [Zheng Y](#)³, [Li B](#)¹, [Hu Y](#)¹, [Lang C](#)^{1,4}, [Huang D](#)¹, [Sun Q](#)¹, [Xiong Y](#)^{1,5}, [Huang X](#)^{1,6}, [Lv J](#)^{1,7}, [Luo Y](#)⁸, [Shen L](#)¹, [Yang H](#)¹, [Huang G](#)¹, [Yang R](#)¹.

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Abstract

BACKGROUND:

The outbreak of the novel coronavirus in China (SARS CoV-2) that began in December 2019 presents a significant and urgent threat to global health. This study was conducted to provide the international community with a deeper understanding of this new infectious disease.

METHODS:

Epidemiological, clinical features, laboratory findings, radiological characteristics, treatment, and clinical outcomes of 135 patients in northeast Chongqing were collected and analyzed in this study.

RESULTS:

A total of 135 hospitalized patients with COVID-19 were enrolled. The median age was 47 years (IQR 36-55), and there was no significant gender difference (53.3% men). The majority of patients had contact with people from the Wuhan area. Forty-three (31.9%) patients had underlying disease, primarily hypertension (13 [9.6%]), diabetes (12 [8.9%]), cardiovascular disease (7 [5.2%]), and malignancy (4 [3.0%]). Common symptoms included fever (120 [88.9%]), cough (102 [76.5%]), and fatigue (44 [32.5%]). Chest CT scans showed bilateral patchy shadows or ground glass opacity in the lungs of all of the patients. All of the patients received antiviral therapy (135 [100%]) (Kaletra and interferon were both used), antibacterial therapy (59 [43.7%]), and corticosteroids (36 [26.7%]). In addition, many patients received traditional Chinese medicine (124 [91.8%]). It is suggested that patients should receive Kaletra early and should be treated by a combination of western and Chinese medicine. Compared with the mild cases, the severe cases had lower lymphocyte counts and higher plasma levels of Pt, APTT, D-dimer, LDH, PCT, ALB, CRP, and AST.

CONCLUSION:

In this study, the clinic features and therapies of 135 COVID-19 patients were demonstrated. Kaletra and traditional Chinese medicine played an important role in the treatment of the viral pneumonia. Further studies are required to explore the role of Kaletra and traditional Chinese medicine in the treatment of COVID-19. This article is protected by copyright. All rights reserved.

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2. J Med Virol. 2020 Mar 17. doi: 10.1002/jmv.25770. [Epub ahead of print]

[Diagnostic Utility of Clinical Laboratory Data Determinations for Patients with the Severe COVID-19.](#)

[Gao Y¹](#), [Li T¹](#), [Han M¹](#), [Li X¹](#), [Wu D²](#), [Xu Y³](#), [Zhu Y⁴](#), [Liu Y⁵](#), [Wang X¹](#), [Wang L⁵](#).

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Abstract

The role of clinical laboratory data in the differential diagnosis of the severe forms of COVID-19 has not been definitely established. The aim of this study was to look for the warning index in severe COVID-19 patients. We investigated forty-three adult patients with COVID-19. The patients were classified into mild group (28 patients) and severe group (15 patients). Comparison of the haematological parameters between the mild and severe groups showed significant differences in IL-6, D-Dimer, GLU, TT, FIB and CRP ($P < 0.05$). The optimal threshold and area under the ROC curve of IL-6 were 24.3 pg/mL and 0.795 respectively, while those of D-Dimer were 0.28 µg/L and 0.750, respectively. The area under the ROC curve (AUC) of IL-6 combined with D-Dimer was 0.840. The specificity of predicting the severity of COVID-19 during IL-6 and D-Dimer tandem testing was up to 93.3%, while the sensitivity of IL-6 and D-Dimer by parallel test in the severe COVID-19 was 96.4%. IL-6 and D-Dimer were closely related to the occurrence of severe COVID-19 in the adult patients, and their combined detection had the highest specificity and sensitivity for early prediction of the severity of COVID-19 patients, which has important clinical value. This article is protected by copyright. All rights reserved.

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3. Clin Chem Lab Med. 2020 Mar 16. pii: /j/cclm.ahead-of-print/cclm-2020-0272/cclm-2020-0272.xml. doi: 10.1515/cclm-2020-0272. [Epub ahead of print]

[Laboratory abnormalities in children with novel coronavirus disease 2019.](#)

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[Prominent changes in blood coagulation of patients with SARS-CoV-2 infection.](#)

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Abstract

Background As the number of patients increases, there is a growing understanding of the form of pneumonia sustained by the 2019 novel coronavirus (SARS-CoV-2), which has caused an outbreak in China. Up to now, clinical features and treatment of patients infected with SARS-CoV-2 have been reported in detail. However, the relationship between SARS-CoV-2 and coagulation has been scarcely addressed. Our aim is to investigate the blood coagulation function of patients with SARS-CoV-2 infection. **Methods** In our study, 94 patients with confirmed SARS-CoV-2 infection were admitted in Renmin Hospital of Wuhan University. We prospectively collect blood coagulation data in these patients and in 40 healthy controls during the same period. **Results** Antithrombin values in patients were lower than that in the control group ($p < 0.001$). The values of D-dimer, fibrin/fibrinogen degradation products (FDP), and fibrinogen (FIB) in all SARS-CoV-2 cases were substantially higher than those in healthy controls. Moreover, D-dimer and FDP values in patients with severe SARS-CoV-2 infection were higher than those in patients with milder forms. Compared with healthy controls, prothrombin time activity (PT-act) was lower in SARS-CoV-2 patients. Thrombin time in critical SARS-CoV-2 patients was also shorter than that in controls. **Conclusions** The coagulation function in patients with SARS-CoV-2 is significantly deranged compared with healthy people, but monitoring D-dimer and FDP values may be helpful for the early identification of severe cases.

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5. Lancet. 2020 Mar 11. pii: S0140-6736(20)30566-3. doi: 10.1016/S0140-6736(20)30566-3. [Epub ahead of print]

[Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.](#)

[Zhou F](#)¹, [Yu T](#)², [Du R](#)³, [Fan G](#)⁴, [Liu Y](#)², [Liu Z](#)¹, [Xiang J](#)⁵, [Wang Y](#)⁶, [Song B](#)², [Gu X](#)⁴, [Guan L](#)³, [Wei Y](#)², [Li H](#)¹, [Wu X](#)⁷, [Xu J](#)⁸, [Tu S](#)², [Zhang Y](#)¹, [Chen H](#)⁹, [Cao B](#)¹⁰.

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Erratum in

- [Department of Error](#). [Lancet. 2020]

Abstract

BACKGROUND:

Since December, 2019, Wuhan, China, has experienced an outbreak of coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Epidemiological and clinical characteristics of patients with COVID-19 have been reported but risk factors for mortality and a detailed clinical course of illness, including viral shedding, have not been well described.

METHODS:

In this retrospective, multicentre cohort study, we included all adult inpatients (≥ 18 years old) with laboratory-confirmed COVID-19 from Jinyintan Hospital and Wuhan Pulmonary Hospital (Wuhan, China) who had been discharged or had died by Jan 31, 2020. Demographic, clinical, treatment, and laboratory data, including serial samples for viral RNA detection, were extracted from electronic medical records and compared between survivors and non-

survivors. We used univariable and multivariable logistic regression methods to explore the risk factors associated with in-hospital death.

FINDINGS:

191 patients (135 from Jinyintan Hospital and 56 from Wuhan Pulmonary Hospital) were included in this study, of whom 137 were discharged and 54 died in hospital. 91 (48%) patients had a comorbidity, with hypertension being the most common (58 [30%] patients), followed by diabetes (36 [19%] patients) and coronary heart disease (15 [8%] patients). Multivariable regression showed increasing odds of in-hospital death associated with older age (odds ratio 1.10, 95% CI 1.03-1.17, per year increase; $p=0.0043$), higher Sequential Organ Failure Assessment (SOFA) score (5-65, 2.61-12.23; $p<0.0001$), and d-dimer greater than 1 $\mu\text{g/L}$ (18.42, 2.64-128.55; $p=0.0033$) on admission. Median duration of viral shedding was 20.0 days (IQR 17.0-24.0) in survivors, but SARS-CoV-2 was detectable until death in non-survivors. The longest observed duration of viral shedding in survivors was 37 days.

INTERPRETATION:

The potential risk factors of older age, high SOFA score, and d-dimer greater than 1 $\mu\text{g/L}$ could help clinicians to identify patients with poor prognosis at an early stage. Prolonged viral shedding provides the rationale for a strategy of isolation of infected patients and optimal antiviral interventions in the future.

FUNDING:

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6. JAMA Intern Med. 2020 Mar 13. doi: 10.1001/jamainternmed.2020.0994. [Epub ahead of print]

[Risk Factors Associated With Acute Respiratory Distress Syndrome and Death in Patients With Coronavirus Disease 2019 Pneumonia in Wuhan, China.](#)

[Wu C](#)^{1,2,3}, [Chen X](#)³, [Cai Y](#)², [Xia J](#)⁴, [Zhou X](#)², [Xu S](#)², [Huang H](#)⁴, [Zhang L](#)⁴, [Zhou X](#)⁴, [Du C](#)¹, [Zhang Y](#)³, [Song J](#)³, [Wang S](#)³, [Chao Y](#)³, [Yang Z](#)⁵, [Xu J](#)⁶, [Zhou X](#)⁷, [Chen D](#)⁸, [Xiong W](#)⁹, [Xu L](#)¹⁰, [Zhou F](#)¹, [Jiang J](#)³, [Bai C](#)^{3,11}, [Zheng J](#)¹², [Song Y](#)^{1,3,11,13}.

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Abstract

Importance:

Coronavirus disease 2019 (COVID-19) is an emerging infectious disease that was first reported in Wuhan, China, and has subsequently spread worldwide. Risk factors for the clinical outcomes of COVID-19 pneumonia have not yet been well delineated.

Objective:

To describe the clinical characteristics and outcomes in patients with COVID-19 pneumonia who developed acute respiratory distress syndrome (ARDS) or died.

Design, Setting, and Participants:

Retrospective cohort study of 201 patients with confirmed COVID-19 pneumonia admitted to Wuhan Jinyintan Hospital in China between December 25, 2019, and January 26, 2020. The final date of follow-up was February 13, 2020.

Exposures:

Confirmed COVID-19 pneumonia.

Main Outcomes and Measures:

The development of ARDS and death. Epidemiological, demographic, clinical, laboratory, management, treatment, and outcome data were also collected and analyzed.

Results:

Of 201 patients, the median age was 51 years (interquartile range, 43-60 years), and 128 (63.7%) patients were men. Eighty-four patients (41.8%) developed ARDS, and of those 84 patients, 44 (52.4%) died. In those who developed ARDS, compared with those who did not, more patients presented with dyspnea (50 of 84 [59.5%] patients and 30 of 117 [25.6%] patients, respectively [difference, 33.9%; 95% CI, 19.7%-48.1%]) and had comorbidities such as hypertension (23 of 84 [27.4%] patients and 16 of 117 [13.7%] patients, respectively [difference, 13.7%; 95% CI, 1.3%-26.1%]) and diabetes (16 of 84 [19.0%] patients and 6 of 117 [5.1%] patients, respectively [difference, 13.9%; 95% CI, 3.6%-24.2%]). In bivariate Cox regression analysis, risk factors associated with the development of ARDS and progression from ARDS to death included older age (hazard ratio [HR], 3.26; 95% CI 2.08-5.11; and HR, 6.17; 95% CI, 3.26-11.67, respectively), neutrophilia (HR, 1.14; 95% CI, 1.09-1.19; and HR, 1.08; 95% CI, 1.01-1.17, respectively), and organ and coagulation dysfunction (eg, higher lactate dehydrogenase [HR, 1.61; 95% CI, 1.44-1.79; and HR, 1.30; 95% CI, 1.11-1.52, respectively] and D-dimer [HR, 1.03; 95% CI, 1.01-1.04; and HR, 1.02; 95% CI, 1.01-1.04, respectively]). High fever (≥ 39 °C) was associated with higher likelihood of ARDS development (HR, 1.77; 95% CI, 1.11-2.84) and lower likelihood of death (HR, 0.41; 95% CI, 0.21-0.82). Among patients with ARDS, treatment with methylprednisolone decreased the risk of death (HR, 0.38; 95% CI, 0.20-0.72).

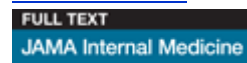
Conclusions and Relevance:

Older age was associated with greater risk of development of ARDS and death likely owing to less rigorous immune response. Although high fever was associated with the development of ARDS, it was also associated with better outcomes among patients with ARDS. Moreover, treatment with methylprednisolone may be beneficial for patients who develop ARDS.

PMCID: PMC7070509 [Available on 2021-03-13]

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7. Zhonghua Jie He He Hu Xi Za Zhi. 2020 Mar 12;43(3):209-214. doi: 10.3760/cma.j.issn.1001-0939.2020.03.014.

[\[Clinical characteristics of 30 medical workers infected with new coronavirus pneumonia\].](#)

[Article in Chinese; Abstract available in Chinese from the publisher]

[Liu M](#)¹, [He P](#)², [Liu HG](#)³, [Wang XJ](#)¹, [Li FJ](#)¹, [Chen S](#)¹, [Lin J](#)⁴, [Chen P](#)⁴, [Liu JH](#)⁴, [Li CH](#)¹.

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Abstract

Objective: To investigate the clinical characteristics of medical staff with novel coronavirus pneumonia(NCP). **Methods:** 30 patients infected with novel coronavirus referred to Jiangnan University Hospital between January 11, 2020 and January 3, 2020 were studied. The data reviewed included those of clinical manifestations, laboratory investigation and Radiographic features. **Results:** The patients consisted of 10 men and 20 women, including 22 doctors and 8 nurses, aged 21~59 years (mean 35±8 years). They were divided to 26 common type and 4 severe cases, all of whom had close (within 1m) contact with patients infected of novel coronavirus pneumonia. The average contact times were 12 (7,16) and the average cumulative contact time was 2 (1.5,2.7) h. Clinical symptoms of these patients were fever in 23 patients (76.67%), headache in 16 patients (53.33%), fatigue or myalgia in 21 patients (70%), nausea, vomiting or diarrhea in 9 patients (30%), cough in 25 patients (83.33%), and dyspnea in 14 patients (46.67%). Routine blood test revealed WBC<4.0×10⁹/L in 8 patients (26.67%), (4-10) ×10⁹/L in 22 patients (73.33%), and WBC>4.0×10⁹/L in 4 patients (13.33%) during the disease. Lymphocyte count<1.0×10⁹/L occurred in 12 patients (40%), abnormal liver function in 7 patients (23.33%), myocardial damage in 5 patients (16.67%), elevated D-dimer (>0.5mg/l) in 5 patients (16.67%). Compared with normal patients, the average exposure times, cumulative exposure time, BMI, Fever time, white blood cell count, liver enzyme, LDH, myoenzyme and D-dimer were significantly increased in severe patients, while the lymphocyte count and albumin levels in peripheral blood were significantly decreased. Chest CT mainly showed patchy shadows and interstitial changes. According to imaging examination, 11 patients (36.67%) showed Unilateral pneumonia and 19 patients (63.33%) showed bilateral pneumonia, 4 patients (13.33%) showed bilateral multiple mottling and ground-glass opacity. Compared with the patients infected in the protected period, the proportion of severe infection and bilateral pneumonia were both increased in the patients infected in unprotected period. **Conclusion:** Medical staffs are at higher risk of infection. Infection rates are associated with contact time, the amount of suction virus. Severe patients had BMI increased, heating time prolonged, white blood cell count, lymphocyte count, D-dimer and albumin level significantly changed and were prone to be complicated with liver damage and myocardial damage. Strict protection measures is important to prevent infection for medical workers.

PMID: 32164090 [Indexed for MEDLINE]

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8. Zhonghua Gan Zang Bing Za Zhi. 2020 Mar 10;28(0):E003. doi: 10.3760/cma.j.cn501113-20200226-00070. [Epub ahead of print]

[\[Clinical characteristics and influencing factors of patients with novel coronavirus pneumonia combined with liver injury in Shaanxi region\].](#)

[Article in Chinese; Abstract available in Chinese from the publisher]

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Abstract

Objective: To understand the clinical characteristics, change of liver function, influencing factors and prognosis in hospitalized patients with coronavirus disease-19 (COVID-19) combined with liver injury. **Methods:** The general conditions, biochemical indicators of liver, blood clotting mechanism, routine blood test, UGT1A1 * 28 gene polymorphism and other data of 40 cases with COVID-19 admitted to the isolation ward of Tangdu Hospital were retrospectively analyzed. The clinical characteristics, influencing factors and prognosis of liver injury in patients with liver injury group and those with normal liver function group were compared. The mean of two samples in univariate analysis was compared by t-test and analysis of variance. The counting data was measured by χ^2 tests. The non-normal distribution measurement data were described by the median, and the non-parametric test was used. Statistically significant influencing factors were used as the independent variables in univariate analysis. Multiple logistic regression analysis was used to analyze the main influencing factors of liver injury. **Results:** Of the 40 cases, 25 were male (62.5%) and 15 were female (37.5%), aged 22 to 83 (53.87 ± 15.84) years. Liver injury was occurred in 22 cases (55%) during the course of the disease. Alanine aminotransferase (ALT) and aspartate aminotransferase (AST) level was initially increased (4.4 to 3.5 times of the normal value) along with decrease of albumin in the second week, and the difference was statistically significant ($P < 0.001$). Ten cases (43.5%) had highest abnormal total blood bilirubin ($54.1 \mu\text{mol/L}$). There was no correlation between the increase in transaminase and the increase in total blood bilirubin ($R = -0.006$, $P = 0.972$). Three cases had prothrombin activity (PTA) of $\leq 50\%$, 10 cases had elevated FDP, and 13 cases had elevated D-dimer, all of whom were severe or critically ill. Liver function injury was more likely to occur in patients who used many types of drugs and large amounts of hormones ($P = 0.002$, $P = 0.031$), and there was no correlation with the TA6TA7 mutation in the UGT1A1 * 28 gene locus. Multiple regression analysis showed that the occurrence of liver injury was only related to critical illness. The liver function of all patients had recovered within one week after conventional liver protection treatment. **Conclusion:** COVID-19 combined with liver function injury may be due to the slight elevation of transaminase, mostly around the second week of the disease course. Severe patients have a higher proportion of liver injury, and critical type is an independent risk factor for liver injury.

PMID: 32153170

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9. Clin Chem Lab Med. 2020 Mar 3. pii: /j/cclm.ahead-of-print/cclm-2020-0198/cclm-2020-0198.xml. doi: 10.1515/cclm-2020-0198. [Epub ahead of print]

[Laboratory abnormalities in patients with COVID-2019 infection.](#)

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10. Zhonghua Jie He He Hu Xi Za Zhi. 2020 Feb 29;43(0):E026. doi: 10.3760/cma.j.cn112147-20200224-00159. [Epub ahead of print]

[\[The keypoints in treatment of the critical coronavirus disease 2019 patient\].](#)

[Article in Chinese; Abstract available in Chinese from the publisher]

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Abstract

The treatment of critically ill patients with coronavirus disease 2019(COVID-19) faces compelling challenges. In this issue, we'd like to share our first-line treatment experience in treating COVID-19. Hemodynamics need be closely monitored and different types of shock should be distinguished. Vasoconstrictor drugs should be used rationally and alerting of complications is of the same importance. The risk of venous thromboembolism (VTE) needs to be assessed, and effective prevention should be carried out for high-risk patients. It is necessary to consider the possibility of pulmonary thromboembolism (PTE) in patients with sudden onset of oxygenation deterioration, respiratory distress, reduced blood pressure. However, comprehensive analysis of disease state should be taken into the interpretation of abnormally elevated D-Dimer. Nutritional support is the basis of treatment. It's important to establish individual therapy regimens and to evaluate, monitor and adjust dynamically. Under the current epidemic situation, convalescent plasma can only be used empirically, indications need to be strictly screened, the blood transfusion process should be closely monitored and the curative effect should be dynamically evaluated.

PMID: 32111113

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11. Chin Med Sci J. 2020 Feb 27. doi: 10.24920/003724. [Epub ahead of print]

[Expert Recommendations for Tracheal Intubation in Critically ill Patients with Noval Coronavirus Disease 2019.](#)

[Zuo MZ](#)¹, [Huang YG](#)², [Ma WH](#)³, [Xue ZG](#)⁴, [Zhang JQ](#)⁵, [Gong YH](#)², [Che L](#)²; [Chinese Society of Anesthesiology Task Force on Airway Management.](#)

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Abstract

Coronavirus Disease 2019 (COVID-19), caused by a novel coronavirus (SARS-CoV-2), is a highly contagious disease. It firstly appeared in Wuhan, Hubei province of China in December 2019. During the next two months, it moved rapidly throughout China and spread to multiple countries through infected persons travelling by air. Most of the infected patients have mild symptoms including fever, fatigue and cough. But in severe cases, patients can progress rapidly and develop to the acute respiratory distress syndrome, septic shock, metabolic acidosis and coagulopathy. The new coronavirus was reported to spread via droplets, contact and natural aerosols from human-to-human. Therefore, high-risk aerosol-producing procedures such as endotracheal intubation may put the anesthesiologists at high risk of nosocomial infections. In fact, SARS-CoV-2 infection of anesthesiologists after endotracheal intubation for confirmed COVID-19 patients have been reported in hospitals in Wuhan. The expert panel of airway management in Chinese Society of Anaesthesiology has deliberated and drafted this recommendation, by which we hope to guide the performance of endotracheal intubation by frontline anesthesiologists and critical care physicians. During the airway management, enhanced droplet/airborne PPE should be applied to the health care providers. A good airway assessment before airway intervention is of vital importance. For patients with normal airway, awake intubation should be avoided and modified rapid sequence induction is strongly recommended. Sufficient muscle relaxant should be assured before intubation. For patients with difficult airway, good preparation of airway devices and detailed intubation plans should be made.

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[Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China.](#)

[Zhang JJ](#)¹, [Dong X](#)¹, [Cao YY](#)², [Yuan YD](#)³, [Yang YB](#)⁴, [Yan YQ](#)⁵, [Akdis CA](#)⁶, [Gao YD](#)¹.

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Abstract

BACKGROUND:

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has been widely spread. We aim to investigate the clinical characteristic and allergy status of patients infected with SARS-CoV-2.

METHODS:

Electronic medical records including demographics, clinical manifestation, comorbidities, laboratory data, and radiological materials of 140 hospitalized COVID-19 patients, with confirmed result of SARS-CoV-2 viral infection, were extracted and analyzed.

RESULTS:

An approximately 1:1 ratio of male (50.7%) and female COVID-19 patients was found, with an overall median age of 57.0 years. All patients were community-acquired cases. Fever (91.7%), cough (75.0%), fatigue (75.0%), and gastrointestinal symptoms (39.6%) were the most common clinical manifestations, whereas hypertension (30.0%) and diabetes mellitus (12.1%) were the most common comorbidities. Drug hypersensitivity (11.4%) and urticaria (1.4%) were self-reported by several patients. Asthma or other allergic diseases were not reported by any of the patients. Chronic obstructive pulmonary disease (COPD, 1.4%) patients and current smokers (1.4%) were rare. Bilateral ground-glass or patchy opacity (89.6%) was the most common sign of radiological finding. Lymphopenia (75.4%) and eosinopenia (52.9%) were observed in most patients. Blood eosinophil counts correlate positively with lymphocyte counts in severe ($r = .486$, $P < .001$) and nonsevere ($r = .469$, $P < .001$) patients after hospital admission. Significantly higher levels of D-dimer, C-reactive protein, and procalcitonin were associated with severe patients compared to nonsevere patients (all $P < .001$).

CONCLUSION:

Detailed clinical investigation of 140 hospitalized COVID-19 cases suggests eosinopenia together with lymphopenia may be a potential indicator for diagnosis. Allergic diseases, asthma, and COPD are not risk factors for SARS-CoV-2 infection. Older age, high number of comorbidities, and more prominent laboratory abnormalities were associated with severe patients.

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Abnormal coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia.

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Abstract

BACKGROUND:

In the recent outbreak of novel coronavirus infection in Wuhan, China, significantly abnormal coagulation parameters in severe novel coronavirus pneumonia (NCP) cases were a concern.

OBJECTIVES:

To describe the coagulation feature of patients with NCP.

METHODS:

Conventional coagulation results and outcomes of 183 consecutive patients with confirmed NCP in Tongji hospital were retrospectively analyzed.

RESULTS:

The overall mortality was 11.5%, the non-survivors revealed significantly higher D-dimer and fibrin degradation product (FDP) levels, longer prothrombin time and activated partial thromboplastin time compared to survivors on admission ($P < .05$); 71.4% of non-survivors and 0.6% survivors met the criteria of disseminated intravascular coagulation during their hospital stay.

CONCLUSIONS:

The present study shows that abnormal coagulation results, especially markedly elevated D-dimer and FDP are common in deaths with NCP.

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[\[Clinical characteristics of 30 medical workers infected with new coronavirus pneumonia\].](#)

[Article in Chinese; Abstract available in Chinese from the publisher]

[Liu M](#)¹, [He P](#)², [Liu HG](#)³, [Wang XJ](#)¹, [Li FJ](#)¹, [Chen S](#)¹, [Lin J](#)⁴, [Chen P](#)⁴, [Liu JH](#)⁴, [Li CH](#)¹.

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Abstract

Objective: To investigate the clinical characteristics of medical staff with novel coronavirus pneumonia(NCP). **Methods:** 30 patients infected with novel coronavirus referred to jiangnan university hospital between January 11, 2020 and January 3, 2020 were studied. The data reviewed included those of clinical manifestations, laboratory investigation and Radiographic features. **Results:** The patients consisted of 10 men and 20 women, including 22 doctors and 8 nurses,aged 21~59 years(mean 35±8 years).They were divided to 26 common type and 4 severe cases, all of whom had close(within 1m) contact with patients infected of novel coronavirus pneumonia. The average contact times were 12 (7,16) and the average cumulative contact time was 2 (1.5,2.7) h.Clinical symptoms of these patients were fever in 23 patients (76.67%) , headache in 16 petients (53.33%) , fatigue or myalgia in 21patients (70%) , nausea, vomiting or diarrhea in 9 petients (30%) , cough in 25 petients (83.33%) , and dyspnea in 14 petients (46.67%) .Routine blood test revealed WBC <4.0×10(9)/L in 8 petients (26.67%) , (4-10) ×10(9)/L in 22 petients (73.33%) , and WBC>4.0×10(9)/L in 4 petients (13.33%) during the disease.Lymphocyte count <1.0×10(9)/L occurred in 12 petients (40%),abnormal liver function in 7 petients (23.33%) ,myocardial damage in 5 petients(16.67%), elevated D-dimer (>0.5mg/l) in 5 patients (16.67%). Compared with normal patients, the average exposure times, cumulative exposure time, BMI, Fever time, white blood cell count, liver enzyme, LDH, myoenzyme and D-dimer were significantly increased in severe patients, while the lymphocyte count and albumin levels in peripheral blood were significantly decreased.Chest CT mainly showed patchy shadows and interstitial changes.According to imaging examination, 11 patients (36.67%) showed Unilateral pneumonia and 19 patients (63.33%) showed bilateral pneumonia,4 patients (13.33%) showed bilateral multiple mottling and ground-glass opacity.Compared with the patients infected in the protected period, the proportion of severe infection and bilateral pneumonia were both increased in the patients infected in unprotected period. **Conclusion:** Medical staffs are at higher risk of infection.Infection rates are associated with contact time, the amount of suction virus. Severe patients had BMI increased, heating time prolonged , white blood cell count, lymphocyte count, D-dimer and albumin level significantly changed and were prone to be complicated with liver damage and myocardial damage.Strict protection measures is important to prevent infection for medical workers.

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Clinical and biochemical indexes from 2019-nCoV infected patients linked to viral loads and lung injury.

[Liu Y](#)¹, [Yang Y](#)², [Zhang C](#)^{3,4}, [Huang F](#)⁴, [Wang F](#)², [Yuan J](#)², [Wang Z](#)², [Li J](#)², [Li J](#)², [Feng C](#)², [Zhang Z](#)², [Wang L](#)², [Peng L](#)², [Chen L](#)², [Qin Y](#)⁴, [Zhao D](#)⁴, [Tan S](#)⁵, [Yin L](#)⁶, [Xu J](#)⁶, [Zhou C](#)³, [Jiang C](#)⁷, [Liu L](#)⁸.

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Abstract

The outbreak of the 2019-nCoV infection began in December 2019 in Wuhan, Hubei province, and rapidly spread to many provinces in China as well as other countries. Here we report the epidemiological, clinical, laboratory, and radiological characteristics, as well as potential biomarkers for predicting disease severity in 2019-nCoV-infected patients in Shenzhen, China. All 12 cases of the 2019-nCoV-infected patients developed pneumonia and half of them developed acute respiratory distress syndrome (ARDS). The most common laboratory abnormalities were hypoalbuminemia, lymphopenia, decreased percentage of lymphocytes (LYM) and neutrophils (NEU), elevated C-reactive protein (CRP) and lactate dehydrogenase (LDH), and decreased CD8 count. The viral load of 2019-nCoV detected from patient respiratory tracts was positively linked to lung disease severity. ALB, LYM, LYM (%), LDH, NEU (%), and CRP were highly correlated to the acute lung injury. Age, viral load, lung injury score, and blood biochemistry indexes, albumin (ALB), CRP, LDH, LYM (%), LYM, and NEU (%), may be predictors of disease severity. Moreover, the Angiotensin II level in the

plasma sample from 2019-nCoV infected patients was markedly elevated and linearly associated to viral load and lung injury. Our results suggest a number of potential diagnosis biomarkers and angiotensin receptor blocker (ARB) drugs for potential repurposing treatment of 2019-nCoV infection.

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[Investigation of an experimental infection model of equine coronavirus in adult horses.](#)

[Schaefer E¹](#), [Harms C¹](#), [Viner M¹](#), [Barnum S²](#), [Pusterla N²](#).

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Abstract

BACKGROUND:

Equine coronavirus (ECoV) is a recently reported enteric disease of adult horses. Natural infection by ECoV has been reported in adult horses worldwide, whereas experimental infection has only been reported in juvenile horses. An experimental infection model is needed to study the clinical presentation, laboratory abnormalities, and pathophysiological changes associated with ECoV.

OBJECTIVES:

To investigate the clinical, hematologic, molecular, and serological features of adult horses experimentally infected with ECoV.

ANIMALS:

Eight adult horses.

METHODS:

Four horses were intragastrically infected with fecal material containing 10^9 genome equivalents of ECoV. Four additional horses were exposed daily to the feces from the experimentally-infected horses. Monitoring included physical examinations, as well as daily nasal swab, whole blood, and fecal collection for molecular detection of ECoV. Blood was collected every other day for hematologic analysis and weekly for serologic analysis.

RESULTS:

All 8 horses shed ECoV in feces. Six of the 8 horses (75%) exhibited mild, clinical disease with soft, formed manure; 1 horse exhibited transient pyrexia. All horses maintained total white cell counts within normal limits, but 3 horses developed transient lymphopenia. No statistically significant differences ($P = .20$) were observed in quantity of fecal shedding of ECoV between the 2 groups.

CONCLUSIONS AND CLINICAL IMPORTANCE:

Experimental infection of adult horses with ECoV was associated with mild and self-limiting clinical signs, transient lymphopenia, and fecal shedding of ECoV, which mimics natural infection. No differences between experimentally-infected horses and horses exposed to ECoV-containing feces were identified. Results of our study support a fecal-oral route of transmission.

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[Efficacy of heat-labile enterotoxin B subunit-adjuvanted parenteral porcine epidemic diarrhea virus trimeric spike subunit vaccine in piglets.](#)

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Abstract

Devastating outbreaks of porcine epidemic diarrhea (PED) started in China in late 2010 and rapidly spread to North America and Asia causing severe diarrhea and high mortality in neonatal piglets, indicating that a new generation of vaccine against porcine epidemic diarrhea virus (PEDV) is urgently needed. In the present study, to mimic the native spike (S)

glycoprotein, a stable cell line producing the trimeric ectodomain of S glycoprotein of the PEDV Pintung-52 (PEDV-PT) strain was successfully established by incorporating T4 bacteriophage foldon sequence of fibrin trimerization domains at the C-terminal end and replacing the signal peptide of S protein with the tissue plasminogen activator signal peptide sequence at the N terminal end. The trimeric structure, bio-reactivity to PEDV-specific antibodies, and the N-glycosylation level of the recombinant S protein were characterized. To induce systemic and mucosal immunity, conventional 5-week-old piglets were immunized with the trimeric S glycoprotein combined with the B subunit of Escherichia coli heat-labile enterotoxin (LTB) by the intramuscular (IM) route. As compared with the control group, all piglets in the S protein-LTB immunized (IM PEDV S-LTB) group generated systemic PEDV S-specific IgG and neutralizing antibody in blood but a low level of fecal PEDV-specific IgA and limited protection against challenge of PEDV-PT strain. Our results suggest that the recombinant PEDV trimeric S glycoprotein could be a potential subunit vaccine candidate against PEDV, but IM immunization with LTB as the adjuvant provided insufficient protection. The development of a vaccine regimen for inducing mucosal immunity is an important task for generating a successful subunit vaccine against PEDVs.

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[Spontaneous intracranial hemorrhage in a patient with Middle East respiratory syndrome corona virus.](#)

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Abstract

The Middle East respiratory syndrome corona virus (MERS-CoV) is a novel positive sense singlestranded ribonucleic acid virus of the genus Beta corona virus. This virus was first isolated from a patient who died from severe respiratory illness in June 2012 in Jeddah, Kingdom of Saudi Arabia. We describe an unusual case of a 42 year old healthcare worker who was admitted to our Intensive Care Unit (ICU) King Abdul-Aziz Medical City, with MERS-CoV and severe acute respiratory distress Syndrome and developed a sudden-onset diabetes insipidus and spontaneous massive intracranial hemorrhage with intra-ventricular extension and tonsillar herniation. Computed angiogram of the brain did not reveal any aneurysm or structural defects. She never had uncontrolled hypertension, or coagulopathy, nor she received antiplatelets. We are reporting a rare case of structural neurological damage associated with MERS-CoV infection.

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[Severe neurologic syndrome associated with Middle East respiratory syndrome corona virus \(MERS-CoV\).](#)

[Arabi YM](#)¹, [Harthi A](#), [Hussein J](#), [Bouchama A](#), [Johani S](#), [Hajeer AH](#), [Saeed BT](#), [Wahbi A](#), [Saedy A](#), [AlDabbagh T](#), [Okaili R](#), [Sadat M](#), [Balkhy H](#).

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Abstract

BACKGROUND:

Since the identification of the first case of infection with the Middle East respiratory syndrome corona virus (MERS-CoV) in Saudi Arabia in June 2012, the number of laboratory-confirmed cases has exceeded 941 cases globally, of which 347 died. The disease presents as severe respiratory infection often with shock, acute kidney injury, and coagulopathy. Recently, we observed three cases who presented with neurologic symptoms. These are so far the first reported cases of neurologic injury associated with MERS-CoV infection.

METHODS:

Data was retrospectively collected from three patients admitted with MERS-CoV infection to Intensive Care unit (ICU) at King Abdulaziz Medical City, Riyadh. They were managed separately in three different wards prior to their admission to ICU.

FINDING:

The three patients presented with severe neurologic syndrome which included altered level of consciousness ranging from confusion to coma, ataxia, and focal motor deficit. Brain MRI revealed striking changes characterized by widespread, bilateral hyperintense lesions on T2-weighted imaging within the white matter and subcortical areas of the frontal, temporal, and parietal lobes, the basal ganglia, and corpus callosum. None of the lesions showed gadolinium enhancement.

INTERPRETATION:

CNS involvement should be considered in patients with MERS-CoV and progressive neurological disease, and further elucidation of the pathophysiology of this virus is needed.

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Abstract

New pathogens and antimicrobial-resistant forms of older pathogens continue to emerge, some with the potential for rapid, global spread and high morbidity and mortality. Pathogens can emerge either through introduction into a new population or when the interaction with the vector changes; emergence is also influenced by microbiological adaptation and change, global travel patterns, domestic and wild animal contact and other variants in human ecology and behaviour. Quick, decisive action to detect and control novel pathogens, and thereby contain outbreaks and prevent further transmission, is frequently hampered by incomplete or inadequate data about a new or re-emerging pathogen. Three examples of pathogens that are current causes for human health concern are avian influenza, West Nile virus (WNV) and the severe acute respiratory syndrome (SARS) coronavirus. Pathogens directly or indirectly transmitted by aerosolized droplets, such as avian influenza and SARS, pose considerable containment challenges. Rapid screening tests for other newly described pathogens such as WNV require time for development and may be <100% reliable. The importance of vigilance in the detection and control of newly recognized infectious threats cannot be overstressed. The presence of infectious agents in the blood supply could again have a significant impact on the safe use of both blood and blood-derived products in the care of patients with haemophilia, as did the human immunodeficiency virus in the 1980s. Emerging pathogens will continue to be a reality requiring the collaborative efforts of public health and individual healthcare providers worldwide to contain outbreaks and prevent transmission.

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[Effects of severe acute respiratory syndrome \(SARS\) coronavirus infection on peripheral blood lymphocytes and their subsets.](#)

[He Z](#)¹, [Zhao C](#), [Dong Q](#), [Zhuang H](#), [Song S](#), [Peng G](#), [Dwyer DE](#).

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Abstract

INTRODUCTION:

Severe acute respiratory syndrome (SARS) caused large outbreaks of atypical pneumonia in 2003, with the largest localized outbreak occurring in Beijing, China. Lymphopenia was prominent amongst the laboratory abnormalities reported in acute SARS.

METHODS:

The effect of SARS on peripheral blood lymphocytes and their subsets was examined in 271 SARS coronavirus-infected individuals.

RESULTS:

There was a significant decrease in the CD45+, CD3+, CD4+, CD8+, CD19+ and CD16+/56+ cell counts over the five weeks of the SARS illness although CD4+/CD8+ ratios did not change significantly. The lymphopenia was prolonged, reaching a nadir during days 7-9 in the second week of illness before returning towards normal after five weeks, with the lowest mean CD4+ cell count of 317 cellsx10(6)/L at day 7, and CD8+ cell count of 239 cellsx10(6)/L at day 8. Patients with more severe clinical illness, or patients who died, had significantly more profound CD4+ and CD8+ lymphopenia.

DISCUSSION:

Lymphopenia is a prominent part of SARS-CoV infection and lymphocyte counts may be useful in predicting the severity and clinical outcomes. Possible reasons for the SARS-associated lymphopenia may be direct infection of lymphocytes by SARS-CoV, lymphocyte sequestration in the lung or cytokine-mediated lymphocyte trafficking. There may also be immune-mediated lymphocyte destruction, bone marrow or thymus suppression, or apoptosis.

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Abstract

Severe Acute Respiratory Syndrome (SARS) has been recognized as a new human infectious disease caused by a novel coronavirus (SARS-CoV). Hematological changes in patients with SARS were common, including notably lymphopenia and thrombocytopenia. While the former is the result of decreases in CD4+ or CD8+ T-lymphocytes related to the onset of disease or use of glucocorticoids, the latter may involve a number of potential mechanisms. Although the development of autoimmune antibodies or immune complexes triggered by viral infection may play a significant role in inducing thrombocytopenia, SARS-CoV may also directly infect hematopoietic stem/progenitor cells, megakaryocytes and platelets inducing their growth inhibition and apoptosis. Moreover, the increased consumption of platelets and/or the decreased production of platelets in the damaged lungs are a potential alternative mechanism that can contribute to thrombocytopenia in severe critical pulmonary conditions, which has been rarely revealed and will be discussed.

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[Viral loads in clinical specimens and SARS manifestations.](#)

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Abstract

A retrospective viral load study was performed on clinical specimens from 154 patients with laboratory-confirmed severe acute respiratory syndrome (SARS); the specimens were prospectively collected during patients' illness. Viral load in nasopharyngeal aspirates (n = 142) from day 10 to day 15 after onset of symptoms was associated with oxygen desaturation, mechanical ventilation, diarrhea, hepatic dysfunction, and death. Serum viral load (n = 53) was associated with oxygen desaturation, mechanical ventilation, and death. Stool viral load (n = 94) was associated with diarrhea, and urine viral load (n = 111) was associated with abnormal urinalysis results. Viral replications at different sites are important in the pathogenesis of clinical and laboratory abnormalities of SARS.

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[Dubois-Dauphin M](#)¹, [Eder-Colli L](#), [Vallet P](#), [Stutz A](#), [Nef S](#), [Vassalli JD](#).

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Abstract

We have generated a mouse strain carrying a transgene driven by a strong and ubiquitous promoter (human cytomegalovirus hCMV/beta-actin) and containing an enhanced green fluorescent protein (eGFP) coding sequence upstream of the 3' untranslated region (3'UTR) of tissue-type plasminogen activator (t-PA) mRNA. The 3'UTR of t-PA mRNA is known to be involved in the reversible deadenylation and translational repression of transcripts in mouse oocytes. hCMV/beta-actin-eGFP-3'UTR t-PA transgenic mice express eGFP mRNA in all brain structures analyzed but lack eGFP fluorescence, with the exception of blood vessels, choroid plexus, and Purkinje cells. Taking advantage of these features, we tested whether certain pathological conditions, in particular injuries of the nervous system, might trigger eGFP fluorescence in traumatized cells or neurons. From this perspective, we analyzed eGFP mRNA expression and eGFP fluorescence in experimental models of nervous system lesions, such as motoneuron axotomy and cerebral stroke induced by middle cerebral artery occlusion. We found an increase in eGFP fluorescence in specific brain areas in cells suffering or reacting to these injuries. This increased fluorescence is correlated with an increased transcription of eGFP in lesioned cells, presumably enhanced by a release of the translational silencing mediated by the 3'UTR region of the t-PA mRNA. This transgenic mouse model may prove useful to study the development of neurodegenerative lesions.

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[SARS: clinical features and diagnosis.](#)

[Hui DS](#)¹, [Wong PC](#), [Wang C](#).

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Abstract

Severe acute respiratory syndrome (SARS) is a highly infectious disease with a significant morbidity and case fatality. The major clinical features include persistent fever, chills/rigor, myalgia, malaise, dry cough, headache and dyspnoea. Less common symptoms include sputum production, sore throat, coryza, dizziness, nausea, vomiting and diarrhoea. Older subjects may present with decrease in general well-being, poor feeding, fall/fracture and delirium, without the typical febrile response. Common laboratory features include lymphopenia with depletion of CD4 and CD8 lymphocytes, thrombocytopenia, prolonged activated partial thromboplastin time, elevated D-Dimer, elevated alanine transaminases, lactate dehydrogenase and creatinine kinase. The constellation of compatible clinical and laboratory findings, together with the rather characteristic radiological features especially on HRCT and the lack of clinical response to broad-spectrum antibiotics, should quickly arouse suspicion of SARS. The positivity rates of urine, nasopharyngeal aspirate and stool specimen have been reported to be 42%, 68% and 97%, respectively, on day 14 of illness, whereas serology for confirmation may take 28 days to reach a detection rate above 90%. Recently, quantitative measurement of blood SARS CoV RNA with real-time RT-PCR technique has been developed with a detection rate of 80% as early as day 1 of hospital admission but the detection rates drop to 75% and 42% on day 7 and day 14, respectively. PMID: 15018129 [Indexed for MEDLINE]

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