

BIBLIOGRAPHIE RECHERCHE COVID 19

NEPHROLOGIE 25 MARS 2020

PR ALEXANDRE KARRAS, DR AURELIEN LORTHIOIR, DR OLIVIA LENOIR,

PR PATRICK BRUNEVAL, HÔPITAL EUROPEEN GEORGES POMPIDOU

JOURNAL AUTEUR	TITRE	PRINCIPALE QUESTION	POINTS CLES
Bo Diao MedRxiv 4th March 2020	Human Kidney is a Target for Novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection	Is the kidney a target of SARS Cov2 ? Retrospective analysis of eGFR and other clinical parameters from 85 patients . Kidney tissues from six patients with postmortem examinations	- 27.06% (23/85) patients exhibited acute renal failure (ARF). The elderly patients and those with comorbidities such as hypertension and heart failure more developed ARF more frequently (65.22% vs 24.19%, $p < 0.001$; 69.57% vs 11.29%, $p < 0.001$, respectively). - H&E staining demonstrated kidney tissues from postmortems have severe acute tubular necrosis, luminal brush border sloughing and vacuole degeneration, and lymphocyte infiltration . Dilated capillary vessels were

			<p>observed in the glomeruli of these 6 cases</p> <ul style="list-style-type: none"> - Immunohistochemistry showed that SARS-CoV-2 NP antigen was accumulated in kidney tubules. - Viral infection not only induces CD68+ macrophages infiltrated into tubulointerstitium, but also enhances complement C5b-9 deposition on tubules.
<p>Hua Fan medRxiv 9th March 2020</p>	<p>Retrospective Analysis of Clinical Features in 101 Death Cases with COVID-19</p>	<p>Organ failure in death due to SARS-CoV 2</p>	<ul style="list-style-type: none"> - Liver and kidney damages were not significant at the time of admission and at ICU admission, but a significant deterioration occurred 48h before death. <p>At admission / ICU admission / 48h before death</p> <p>Serum creatinine</p> <p>74.40(64-94.30) /74.95(61.80-101.43) / 173.70(96.60-350.70)</p>
<p>Qiao Shi medRxiv 4th March</p>	<p>Clinical characteristics of 101 non-surviving hospitalized patients with COVID-19—A single</p>	<p>Organ failure and clinical characteristics in death from SARS-CoV 2.</p> <p>Comparison between death</p>	<ul style="list-style-type: none"> - Retrospective study on 101 patients with comorbidities including hypertension (58.42%), cardiovascular disease (23.76%), diabetes (21.78%), chronic pulmonary disease (13.86%),

<p>2020</p>	<p>center, retrospective study</p>	<p>within 3 days or after 3 days in hospital</p>	<p>cerebrovascular disease (12.87%), chronic kidney disease (10.89%) and malignancy (6.93%)</p> <p>- acute kidney injury occurred in 23 (22.77%) of patients</p> <p>- elevated C-reactive protein (123 ± 10 vs 94 ± 9 mg/L), procalcitonin (2.26 vs 0.58 ng/ml), hsTnI (1.98 vs 0.2 ng/ml), Creatine kinase-MB (6.14 vs 2.78 ng/ml), myoglobin (437.7 vs 216.8 ug/L) and BUN (15.2 vs 10.08 mmol/L) were over normal range and significantly higher in patients died within 3 days of admission</p>
<p>Bicheng Zhang medRxiv 26th February 2020</p>	<p>Clinical characteristics of 82 death cases with COVID-19</p>	<p>Organ failure in death due to SARS-CoV 2</p>	<p>- Retrospective study of 82 death cases. Median time from initial symptom to death : 15 days (11-20)</p> <p>- comorbidity (76.8%), including hypertension (56.1%), heart disease (20.7%), diabetes (18.3%), cerebrovascular disease (12.2%), and cancer (7.3%).</p> <p>- Respiratory failure was the leading cause of death (69.5%), following by sepsis syndrome/MOF (28.0%), cardiac failure (14.6%), hemorrhage (6.1%), and renal failure (3.7%).</p>

			<p>- respiratory, cardiac, hemorrhage, hepatic, and renal damage were found in 100%, 89%, 80.5%, 78.0%, and 31.7% of patients</p> <p>- Creatinine >133μmol/L ; 11/72 cases (15.3%)</p>
<p>Anti-2019-nCoV Volunteers, Zhen Li et al medRxiv February 12nd, 2020</p>	<p>Caution on Kidney Dysfunctions of 2019-nCoV Patients</p>	<p>Kidney function among patients infected by SARS-CoV 2</p>	<p>63% (32/51) of the patients exhibited proteinuria, by dipstick analysis</p> <p>9% (11/59) of the patients had increased plasma creatinine (>200 μmol/L in all 3 deceased patients)</p>
<p>Yichun Cheung Kidney Int 16th March, 2020</p>	<p>Kidney disease is associated with in-hospital death of patients with COVID-19</p>	<p>Prevalence and prognostic value of kidney involvement in SARS-CoV 2 infection</p>	<p>Prospective cohort study of 701 patients with COVID-19 admitted in a tertiary teaching hospital</p> <p>On admission, 43.9% of patients had proteinuria and 26.7% had hematuria. The prevalence of elevated serum creatinine, and eGFR<60 ml/min/1.73m² were 14.4 and 13.1%, respectively</p> <p>During the study period, AKI occurred in 5.1%</p>

			<p>patients</p> <p>The incidence of in-hospital death in the patients with elevated baseline serum creatinine was 33.7%, which was significantly higher than in those with normal baseline serum creatinine (13.2%)</p> <p>After adjustment (for age, sex, disease severity, comorbidities and lymphocyte count), proteinuria, hematuria, elevated baseline serum creatinine, peak serum creatinine > 133μmol/L, and AKI over stage 2 were all associated with in-hospital death</p>
<p>Bo Diao medRxiv</p> <p>https://doi.org/10.1101/2020.03.04.20031120</p>	<p>Human Kidney is a Target for Novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection</p>	<p>Apart from the respiratory system, it is unclear whether SARS-CoV-2 can also directly infect other tissues such as the kidney or induce acute renal failure.</p>	<p>6 patients autopsies</p> <p>Necrose tubulaire et infiltrat lymphocytaire, sans anomalie glomérulaire ou vasculaire majeure</p> <p>déposition de complément mais uniquement sur les tubules</p>

			<p>pas d'explication évidente aux protéinuries glomérulaires majeures constatées en clinique</p> <p>Comments:</p> <ol style="list-style-type: none">1. Is there any relationship between renal dysfunction and respiratory function? No statistical study or not shown.2. Is the primary antibody against viral NP specific? Probably since negative tissue controls have been used and are negative. The signal in kidney tissues (and lung as positive control) support the presence of the virus within the renal tissue: but it does not demonstrate definitively that it is locally (in situ) pathogenic → limitation of the message.3. Tissue studies from most severe cases leading to death, so with previous severe hypoxemia, shock,... Are the lesions specific or secondary to severe hypoxia and shock? The deposits of C4b9 should be tested in significant control tissue, namely renal tissue from other shocks (cardiogenic, nonCOV2-infectious) and not versus normal
--	--	--	--

			<p>healthy tissues.</p> <p>The findings are mainly acute tubular necrosis which is a very common nonspecific terminal pattern. Only the presence of giant cells (syncytial multinucleated cells) are suggestive of viral pathogenic reaction.</p>
--	--	--	--