Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
POS-001
MITOCHONDRIAL ENZYMES INFUSED INTO THE KIDNEY UNDER HYDRODYNAMIC PRESSURES SIGNIFICANTLY IMPROVES CREATININE AND BUN LEVELS AT THE ONSET OF MODERATE AND SEVERE ACUTE KIDNEY INJURIES

Corridon, P* 1

1Khalifa University of Science and Technology, Department of Immunology and Physiology, Abu Dhabi, United Arab Emirates

Introduction: The COVID-19 pandemic has highlighted the need to address how renal insults are treated. There is an urgent need to better understand the complex relationship between infections and kidney disease and develop safe and effective approaches that can be translated to the clinic. Hydrodynamic fluid delivery has shown promise in influencing renal function in disease models. This technique previously provided preconditioned protection in acute injury models by upregulating the mitochondrial adaptation, while hydrodynamic injections of saline alone have also improved microvascular perfusion. Accordingly, hydrodynamic mitochondrial gene delivery was applied to investigate its ability to halt renal impairment that may occur following episodes of acute moderate and severe injuries in a rat model.

Methods: Transgene infusates were prepared by suspending approximately 2 μg of IDH2 (isocitrate dehydrogenase 2 (NADP+) and mitochondrial) plasmid DNA/μg of body weight in 0.5 ml of saline. Animals were subjected to moderate (bilateral pedicle clamp 30 mins) or severe (bilateral pedicle clamp 60 mins) forms of ischemia-reperfusion injury (IRI). Infusates were delivered directly into the left renal vein within 5 seconds, roughly 1 hour after IRI was established. Serum creatinine (Scr) and blood urea nitrogen (BUN) levels were monitored for 2 weeks.

Results: Significant reductions in the levels of both metabolites (p < 0.05 for both cases) were achieved with single transgene treatments administered at both time points. Specifically, the maximal rises in Scr and BUN levels were reduced by at least 50%, which translated the effects of a severe injury to a moderate injury and a moderate injury to a mild injury.

Conclusions: Therefore, this study identifies an approach that boosts recovery and halts the progression of ischemia-reperfusion at its inception and can be vital for high-risk conditions and may help devise translation models to address the rising incidence of acute renal diseases.

No conflict of interest

POS-002
POST COVID VACCINE ACUTE KIDNEY INJURY: A CASE REPORT

Kar, S* 1, Das Gupta, D 2

1Sylhet M A G Osmani Medical College, Nephrology, Sylhet, Bangladesh, 2Sylhet M A G Osmani Medical College, Pharmacology, Sylhet, Bangladesh

Introduction: We hereby present a case of acute kidney injury following COVID-19 vaccine in a school boy in Bangladesh.

Methods: A schoolboy aged 14 years presented to us with face and leg swelling and scanty micturition following two day after Pfizer vaccine for prevention of COVID-19. This was his second dose. He denied any history of sore throat, rash ,itching or joint pain. His first dose of COVID vaccine was uneventful. We did his Urine Routine Examination Albumin was +++ RBC Nil, Hyalin Cast + with no other abnormality . Urine PCR was 3.6. S creatinine was 2.1 mg/dl. Ultrasonography of Kidneys were normal. We did a renal biopsy and it revealed 16 glomeruli having mild mesangial proliferation. Direct Immunofluorescence revealed no deposition.

Results: Patient was admitted to hospital. He was given 12 weeks of prednisolone and other supportive therapy. Patient improved after completion of treatment.

Conclusions: COVID vaccine associated Glomerulonephritis and AKI is a concern. Healthcare professionals at the primary level should make aware of this side effect.

No conflict of interest

POS-003
ACUTE KIDNEY INJURY IN CHILDREN WITH COVID-19 RELATED MULTISYSTEM INFLAMMATORY SYNDROME (MIS-C)

Wani, A* 1

1Superspeciality hospital- shireenbagh, Nephrology, Srinagar, India

Introduction: Although children with coronavirus disease 19 (COVID-19) generally experience a mild disease, a subset of them develop multisystem inflammatory syndrome (MIS-C) which can lead to multiorgan failure. There is relative rarity of literature regarding acute kidney injury (AKI) in MIS-C. We aim to characterize the clinical features, laboratory findings, and therapies for AKI in MIS-C in our setup.

Methods: This was a 1 ½ year prospective study with patients from GMC Srinagar, its associated hospitals and Shifa Medical Centre, Srinagar. Children <21 years old who had AKI and met the criteria for MIS-C based on CDC guidelines were included in the study.

Results: A total of seven cases were included in the study ranging from 4 to 20 years (mean 11.4±5) with 4 females and 3 males. Persistent fever was present in all patients. Six children had vomiting/diarrhea along with rashes and/or swelling of hands. Myocardial involvement was seen in four, respiratory in two and musculoskeletal in one patient. Oropharyngeal swab for SARS-Cov2 RNA was negative in all the patients. Anticovid antibodies were positive in five patients and two had a history of contact with COVID-19 patients. AKI Stage 1 was present in 3, stage 2 and 3 in 2 patients each. Neutrophilia with lymphopenia was seen in all the patients and thrombocytopenia in 4 patients. Laboratory findings for inflammatory markers showed marked elevation of C-reactive protein (mean 87.6±7.2mg/l), ferritin (mean 810±224mg/ml), procalcitonin (mean 4.9±2.1ng/ml), ESR (mean 64.6±21.9mm/hr), fibrinogen (690±142.1mg/dl), LDH (mean 578.2±370.1U/L) and D-Dimer (mean 7.8±9.4 μg/ml). The patients were treated with a combination of steroids, IVlg and inotropic support wherever needed. All of the patients recovered with a median duration hospital stay of 7 (IQR 5) days.

Conclusions: Children with covid 19 infection should be carefully followed for MIS-C. Although children with MIS-C develop AKI, most of them have full clinical recovery. The long term prognosis of this syndrome is currently unknown until their follow up data becomes available in future.

No conflict of interest

POS-004
NEUTRALIZING ANTI SARS-COV-2 ANTIBODY RESPONSE TO COVID-19 VACCINES: CHADOX1-NCOV-19 AND BBV152 AMONG HAEMODIALYSIS PATIENTS

Selvanathan, D* 1, parthasarathy, R 1, Rohit, A 1, Venkatramanan, S 2, dsouza, C 3

1Madras Medical Mission, Nephrology, CHENNAI, India, 2Nitte DSTNutech, biostatistics, mangalore, India

Introduction: Maintenance haemodialysis patients(MHD) are at high risk of contracting COVID-19 infection. Till date, few studies have shown an attenuated immune response to vaccination among haemodialysis patients. The present study examines the humoral response to ChAdOx1-nCoV-19 and BBV152 among this vulnerable population.

Methods: We prospectively assessed neutralizing anti SARS-Cov-2 antibody titres (miniVidas bioMerieux, France) in 116 vaccinated
MHD patients more than 15 weeks of either one or two doses of ChAdOx1-nCoV-19 and BBV152 to understand antibody response to COVID-19 vaccines and susceptibility to breakthrough infections. A titre of more than 20.66 binding antibody units was considered as positive humoral response as per WHO recommendations. Data on 25 MHD patients with COVID-19 infection before and after vaccination were analysed.

**Results:** Among 149 MHD patients in our cohort, 23 (15.4%) were unwilling for vaccination mainly due to fear of adverse events. Of 126 vaccinated in the study, 116 patients(92%) consented to serum antibody testing. Of 116 patients, 97(83.6%) were administered ChAdOx1-nCoV-19 and 19(16.3%)received BBV152. Table 1 depicts the baseline characteristics of patients receiving vaccination. The mean age of the cohort was 58.49 ± 12.44 years with a male predominance (60.3%). There was no significant difference in the comorbidity profile and dialysis vintage among two groups. Mean time interval between doses was 69.9 ± 38.1 days and 72.5 ± 45.7 days in patients who received ChAdOx1nCov-19 and BBV152 respectively. The median Binding Antibody Units(BAU) was 246.6 and 93.5 in the ChAdOx1-nCoV-19 and BBV152 groups(p=0.12) respectively. The main adverse events reported were low grade fever (17.2%), pain at injection site (8.6%) and breathlessness (1.7%). One patient had AV graft thrombosis leading to access failure 2 weeks following ChAdOx1-nCoV-19 vaccination. Of 116 patients, 88 patients were responders with positive antibody titres. The median time to seropositivity after a single dose was 32.5(30 -103) days and after two doses were 99 (58-122) days. The mean time interval between the first and the second dose was 76 ± 40.2 days in responders which was significantly longer when compared to 53.79 ± 26.8 days in the non-responders(p=0.00). Prior COVID-19 infection was seen in 10 patients among the responders but none in the non-responders. Table 2 highlights the profile of the responders and non-responders to COVID-19 vaccination. Of the 25 patients who developed COVID-19 infection in our cohort, 13 (52%) were post-vaccination. Of these 13 patients, 10 had received ChAdOx1-nCoV-19 and 3 received BBV152. Ten (76.9%) completed two doses and the median time to COVID-19 infection was 23.5(IQR 16.25 - 57.5) days. Hospitalisation was required in 3 versus 5 patients in the unvaccinated and vaccinated groups respectively. Oxygen requirement was lower among those who contracted COVID-19 infection after vaccination (30.7% vs 75%, p<0.05). Mortality was 8.3% in both the groups. Table 3 depicts the detailed COVID-19 infection characteristics among the vaccinated and unvaccinated MHD patients.

**Conclusions:** MHD patients have a favourable immune response to both the viral vector(ChAdOx1-nCoV-19) and inactivated vaccine(BBV152) without major adverse events. Morbidity profile and oxygen requirement is lower in vaccinated dialysis patients developing COVID-19 infection.

No conflict of interest

**POS-005**

**NEUTRALIZING ANTI SARS-COV-2 ANTIBODY RESPONSE TO COVID - 19 VACCINES: CHADOX1-NCOV-19 AND BBV152 AMONG HAEMODIALYSIS PATIENTS**

Selvanathan, D*1, parthasarathy, R1, Rohit, A1, Venkatramanan, S1, Dsozua, C1

1Madras Medical Mission, Nephrology, CHENNAI, India

**Introduction:** Maintenance haemodialysis patients(MHD) are at high risk of contracting COVID-19 infection. Till date, few studies have shown an attenuated immune response to vaccination among haemodialysis patients. The present study examines the humoral response to ChAdOx1-nCoV-19 and BBV152 among this vulnerable population.

**Methods:** We prospectively assessed neutralizing anti SARS-CoV-2 antibody titres (miniVidas bioMerieux, France) in 116 vaccinated MHD patients more than 15 weeks of either one or two doses of ChAdOx1-nCoV-19 and BBV152 to understand antibody response to COVID-19 vaccines and susceptibility to breakthrough infections. A titre of more than 20.66 binding antibody units was considered as positive humoral response as per WHO recommendations. Data on 25 MHD patients with COVID-19 infection before and after vaccination were analysed.

**Results:** Among 149 MHD patients in our cohort, 23 (15.4%) were unwilling for vaccination mainly due to fear of adverse events. Of the 126 vaccinated patients, only 116 patients (92%) consented to serum antibody testing. Of 116 patients, 97 (83.6%) were administered ChAdOx1-nCoV-19 and 19 (16.3%) received BBV152. Table 1 depicts the baseline characteristics of patients receiving vaccination. The mean age of the cohort was 58.49 ± 12.44 years with a male predominance (60.3%). There was no significant difference in the comorbidity profile and dialysis vintage in the two groups. Mean time interval between doses was 69.9 ± 38.1 days and 72.5 ± 45.7 days in patients who received ChAdOx1nCov-19 and BBV152 respectively. The median Binding Antibody Units(BAU) was 246.6 and 93.5 in the ChAdOx1-nCoV-19 and BBV152 groups(p=0.12) respectively. The main adverse events reported were low grade fever (17.2%), pain at injection site (8.6%) and breathlessness (1.7%). One patient had AV graft thrombosis leading to access failure 2 weeks following ChAdOx1-nCoV-19 vaccination. Of 116 patients, 88 patients were responders with positive antibody titres. The median time to seropositivity after a single dose was 32.5(30 -103) days and after two doses were 99 (58-122) days. The mean time interval between the first and the second dose was 76 ± 40.2 days in responders which was significantly longer when compared to 53.79 ± 26.8 days in the non-responders(p=0.00). Prior COVID-19 infection was seen in 10 patients among the responders but none in the non-responders. Table 2 highlights the profile of the responders and non-responders to COVID-19 vaccination. Of the 25 patients who developed COVID-19 infection in our cohort, 13 (52%) were post-vaccination. Of these 13 patients, 10 had received ChAdOx1-nCoV-19 and 3 received BBV152. Ten (76.9%) completed two doses and the median time to COVID-19 infection was 23.5(IQR 16.25 - 57.5) days. Hospitalisation was required in 3 versus 5 patients in the unvaccinated and vaccinated groups respectively. Oxygen requirement was lower among those who contracted COVID-19 infection after vaccination (30.7% vs 75%, p<0.05). Mortality was 8.3% in both the groups. Table 3 depicts the detailed COVID-19 infection characteristics among the vaccinated and unvaccinated MHD patients.

**Table 3: Profile of COVID-19 infected in vaccinated and unvaccinated patients**

| Symptom | Unvaccinated | Vaccinated | P Value |
|---------|--------------|------------|---------|
| Fever   | 9(73.5)      | 10(76.9)   | 0.6     |
| Cough   | 8(69.8)      | 9(72.2)    | 0.5     |
| Breathlessness | 6(50.8) | 5(41.6) | 0.3 |
| Anemia  | -            | 3(23.1)    | 0.3     |
| Myalgia | 4(33.3)      | 4(30.8)    | 0.5     |
| Diarrhoea | 1(8.3) | 2(16.6) | 0.5    |
| Hospitalisation | 3(25%) | 2(15.4%) | 0.05    |
| Oxygen requirement | 0 | 0 | 0     |
| Ventilation requirement | 0 | 0 | 0     |
| Haemoglobin* | 10.7 ± 1.4 | 10 ± 1.2 | 0.2 |
| C-Reactive protein ng/L | 8.25 ± 199 | 4.93 ± 100 | 0.05 |
| D-Dimer ng/ml | 1471 ± 1967 | 17996 ± 877.1 | 0.001 |
| Proteinuria g/L | 1.4 | 1 | 0.2 |
| Albumin | 3.84 | 3.84 | 1 |
| Creatinine mg/dL | 3.6 | 3.6 | 1 |

* Mean ± Standard Deviation
** Median (inter-quartile range)

No conflict of interest