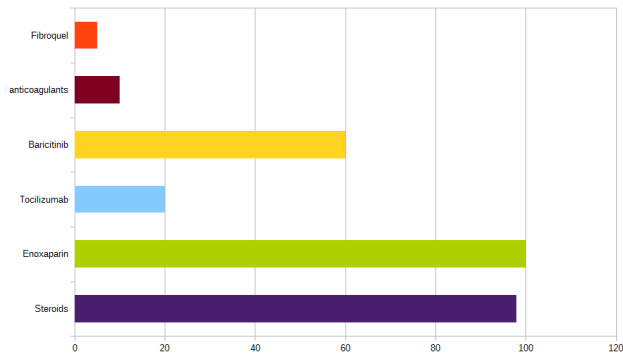
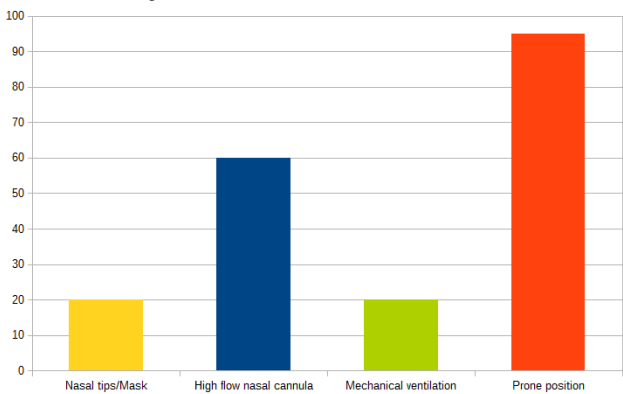


(16.6%). The main comorbidities found were: arterial hypertension (43.9%), Diabetes mellitus 2 (33.3%), heart disease (11.3%) and obesity (10.6%). 95.4% of the patients were not vaccinated against influenza. The main symptoms reported were: fever (92%), cough (87%), dyspnea (76%) and headache (52%). The diagnosis was confirmed with RT-PCR in 63%, reporting negative RT-PCR in 36%; the antigen test was positive in 1%. Regarding the findings of the chest computed tomography, CORADS 5 was reported in 30%, CORADS 6 in 3% and CORADS 4 in 20%. The main treatments used in patients with severe inflammatory pneumonia were: steroids (98%), enoxaparin (100%), tocilizumab (20%), baricitinib (60%), direct oral anticoagulants (10%), fibroquel (5%). 60% were treated with a combination of two or more drugs. The main oxygenation contributions were: 20% nasal tips - mask/reservoir, 60% high flow nasal cannula, 20% mechanical ventilation. In 95% the prone position was indicated. Regarding the clinical evolution, 65.1% were towards improvement, 17.4% died, 12.1% requested transfer to another unit and 5.3% requested voluntary discharge. Overall mortality was 17%.

Medications in ICU



Ventilation strategies



**Conclusion.** A hospital strategy that has the necessary resources and infrastructure as well as openness to the use of medication with emergency approvals for its use or off-label indications, can help limit morbidity and mortality in vulnerable populations and manifest risk factors such as Mexican population

**Disclosures.** All Authors: No reported disclosures

### 564. SARS-CoV-2 Ferritin Nanoparticle Vaccines Elicit Broad SARS Coronavirus Immunogenicity

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**Session:** P-25. COVID-19 Vaccines

**Background.** The zoonotic emergence of SARS-CoV-2 quickly developed into a global pandemic. Multiple vaccine platforms have been advanced to clinical trials and emergency use authorization. The recent emergence of SARS-CoV-2 virus variants with Spike receptor-binding domain (RBD) and N-terminal domain (NTD) mutations, highlights the need for next-generation vaccines that can elicit immune responses that are resilient against Spike mutations.

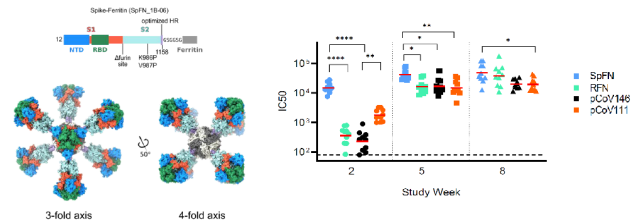
**Methods.** Using a structure-based vaccine design approach, we developed multiple optimized SARS-CoV-2 nanoparticle immunogens that recapitulate the structural and antigenic profile of the SARS-CoV-2 prefusion spike. We assessed these immunogens in murine immunogenicity studies and in a K18-hACE2 transgenic mouse model with a SARS-CoV-2 challenge. Immune sera from vaccinated mice were assessed for SARS-CoV-2 binding, and neutralization against SARS-CoV-2, variants of concern, and the heterologous SARS-CoV-1 virus.

**Results.** In combination with a liposomal-saponin based adjuvant (ALFQ), these immunogens induced robust binding, ACE2-inhibition, and authentic virus and

pseudovirus neutralization. A Spike-Ferritin nanoparticle (SpFN) vaccine elicited neutralizing ID50 titers >10,000 after a single immunization, while RBD-Ferritin (RFN) nanoparticle immunogens elicited ID50 titer values >10,000 values after two immunizations. Purified antibody from SpFN- or RFN-immunized mice was transfused into K18-ACE2 transgenic mice and challenged with a high-dose SARS-CoV-2 virus stock. In order to understand the breadth of vaccine-elicited antibody responses, we analyzed SpFN- and RBD-FN-immunized animal sera against a set of heterologous SARS-CoV-2 RBD variants and SARS-CoV RBD. High binding titers with ACE2-blocking activity were observed against SARS-CoV-2 variants and the heterologous SARS-CoV-1 RBD. Furthermore, both SpFN- and RFN-immunized animal sera showed SARS-CoV-1 neutralizing ID50 titers of >2000.

**Conclusion.** These observations highlight the importance of SARS-CoV-2 neutralizing antibody levels in providing protection against emerging SARS-like coronaviruses and provide a robust platform for pandemic preparedness.

Structure-based design enables development of a SARS-CoV-2 nanoparticle immunogen.



**Disclosures.** All Authors: No reported disclosures

### 565. Risk of COVID-19 Among Healthcare Workers After Launch of Vaccination Campaign at an Academic Medical Center

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**Session:** P-25. COVID-19 Vaccines

**Background.** Coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 virus affected healthcare workers (HCWs) adding additional burden on staffing shortages. COVID-19 vaccination (mRNA 1273 and BNT162b2) has been shown to protect against severe disease, death and reduced risk of asymptomatic infection and transmission from fully vaccinated individuals. Here, we present the impact of COVID-19 vaccination (CoVac) on risk of developing COVID-19 based on test results among unvaccinated and vaccinated HCWs.

**Methods.** Our academic medical center with 11,785 HCWs on its Jackson campus initiated non-mandatory CoVac among HCWs with BNT162b2 on December 16, 2020. Individuals  $\geq 2$  weeks after 1st dose of vaccine were defined as partially vaccinated and those  $\geq 2$  weeks from 2nd dose of vaccine were defined as fully vaccinated. Per facility policy, all symptomatic HCWs (irrespective of vaccination status) were recommended to undergo SARS-CoV-2 RT-PCR testing. Asymptomatic HCWs were also tested upon household exposure, however, this policy was changed on March 9<sup>th</sup> 2021 to allow fully vaccinated asymptomatic HCWs to work without need for quarantine or testing. Universal masking policy among HCWs remained effective at our center during study period.

**Results.** Between the launch of COVID-19 vaccination on December 16, 2020 and April 30, 2021, 5,855 HCWs received one dose of vaccine, and 5,687 received both doses. A total of 1,329 unique HCWs underwent COVID-19 testing between January 4, 2021 and April 30, 2021. Of those, 217 (16.3%) tested positive for SARS-CoV-2 infection; 204 were unvaccinated, 7 were partially vaccinated, and 6 were fully vaccinated (figure 1). Of the 6 fully vaccinated employees, 1 was asymptomatic (testing for travel purposes), 4 had mild symptoms, and one elderly employee required hospitalization with oxygen supplementation and had a complete recovery. No facility outbreaks were reported related to asymptomatic, work exposed, fully vaccinated HCWs.

Figure 1: Distribution of unvaccinated and vaccinated SARS-CoV-2 positive healthcare workers

