Reference of the Week

- **VACCINE TABLE:** modified from Monica Gandhi, VuMedi, How Do Sputnik V, Johnson & Johnson and Novavax Vaccines Compare to Current Authorized Vaccines & New COVID-19 Variants? If Vaccines Receive EUA, Will Herd Immunity Be More Attainable?

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PLATFORM</th>
<th>DOSES</th>
<th>STORAGE LOGISTICS</th>
<th>Efficacy</th>
<th>PROTECTION: HOSPITALIZATION AND DEATH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer</td>
<td>mRNA in lipid nanoparticle</td>
<td>2</td>
<td>Storage: -20°C for 6 mo, Clinic: 2-8°C for 30 days</td>
<td>94.1%</td>
<td>100%</td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>non-replicating chimp adenovirus DNA</td>
<td>2</td>
<td>Storage: 2-8°C for 6 mo</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>non-replicating human adenovirus DNA</td>
<td>1</td>
<td>Storage: -20°C for 2 yr, Clinic: 2-8°C for 3 mo</td>
<td>72% USA, 65% Latin Amer, 57% S Africa</td>
<td>100%</td>
</tr>
<tr>
<td>Novavax</td>
<td>spike protein + adjuvant</td>
<td>2</td>
<td>“Stable”: 2-8°C</td>
<td>89.3% UK 60% S Africa</td>
<td>100%</td>
</tr>
<tr>
<td>Sputnik V</td>
<td>dual human adenoviruses DNA</td>
<td>2</td>
<td>Dry reconstituted vaccine, Storage: 2-8°C</td>
<td>91.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

References:
- Novavax- Novavax COVID-19 Vaccine Demonstrates 89.3% Efficacy in UK Phase 3 Trial. Press Release

Other References:

Premise/Methods: 1. In the UK, MIS-C carries the appellation PIMS-TS (pediatric inflammatory multisystem syndrome temporally associated with coronavirus disease 2019). 2. ENT manifestations of PIMS-TS have been observed with the syndrome. 3. This retrospective single center UK study quantifies these clinical findings.

Findings: 1. 50 children were identified as having PIMS-TS: median age 10 years; 33 (66%) male; 36 (72%) minority groups; median time between acute presentation PIMS-TS and F/U phone ENT screening, 60 days; 38 (76%) PICU admission; 18 (36%) intubation. 2. 19 of 50 patients required formal ENT evaluation. 3. Rates of initial ENT findings: dyspnea 64%, dysphagia 38%, dysphonia 36%, snoring 34%, nasal congestion 24%, anosmia/hyposmia 18%, dygeusia 14%. 4. Inflammation of laryngeal structures occurs in patients with or without intubation.

SEE THE ARTICLE CABINET ON THE S: DRIVE, “COVID-19 ARTICLE RESOURCE CABINET” FOR CHILDREN’S FULL COLLECTION

**Premise/Methods:** 1. Recommendations regarding maternal-newborn proximity have changed as evidence has evolved during the pandemic: absence of ACE2 receptors in the placenta; prolonged PCR positivity well beyond infectivity; asymptomatic spread; and uncommon PCR positivity in breast milk does not reflect infectivity. 2. Currently, rooming in and breast feeding with proper precautions are recommended for newborns. 3. This is a prospective multicenter study in Italy that followed newborns born to SARS-CoV-2 positive mothers. 4. This study evaluated the safety of rooming-in practice in a cohort of neonates born to SARS-CoV-2–infected mothers.

**Findings:** 1. During this 2 month study at 6 Italian hospitals, 62 infants (76% exclusively breast fed) were born to 61 SARS-CoV-2 PCR positive mothers: 46 vaginal deliveries; 44 mothers positive before delivery; 14 at the time of delivery; 3 turned positive 2-5 days post-partum; and 1 mother had severe COVID-19 disease. 2. 1 of 62 infants was SARS-CoV-2 positive before discharge (infant was born to the mother with severe disease); 3. None of the 61 infants tested positive in follow-up and all infants did well. 4. The likelihood of neonatal infection acquired from a PCR + mother is small if a mother does not have symptomatic infection and infection control practices are followed while rooming-in and breast feeding.

**Figure.** Current Practice for Infants Born to Mothers With Coronavirus Disease 2019 (COVID-19)


**Premise/Methods:** 1. Tocilizumab and sarilumab are monoclonal antibodies that inhibit both membrane-bound and soluble interleukin-6 receptors and are used to treat inflammatory conditions. 2. The efficacy of interleukin-6 receptor antagonists in critically ill patients with coronavirus disease 2019 (Covid-19) is unclear despite multiple trials that differ in one way or another (timing during the pandemic, timing during the patient’s illness, severity of disease, etc). 3. This study investigated the effectiveness of tocilizumab and sarilumab on survival and organ support in critically ill patients with Covid-19 in the international Randomized, Embedded, Multifactorial Adaptive Platform Trial for Community-Acquired Pneumonia (REMAP-CAP). 4. Adult subjects with COVID-19 were enrolled within 24 hours of receiving organ support (respiratory or cardiac) in an ICU.
**Findings:** 1. 895 critically ill subjects had undergone randomization in the Immune Modulation Therapy domain (366 were assigned to tocilizumab, 48 to sarilumab, 412 to control, and 69 to other interventions within the domain) at 113 sites across six countries. 2. The primary outcome was the number of respiratory and cardiovascular organ support–free days up to day 21: on the basis of an interim analysis, the independent data and safety monitoring board reported that tocilizumab had met the statistical criteria for efficacy; a subsequent interim analysis revealed that sarilumab also met statistical criteria for efficacy. 3. Tocilizumab and sarilumab were effective across all secondary outcomes, including 90-day survival, time to ICU and hospital discharge, and improvement in the World Health Organization ordinal scale at day 14. 4. The in-hospital mortality in the pooled interleukin-6 receptor antagonist groups was 27% (108 of 395 patients), as compared with 36% (142 of 397 patients) in the control group and the use of IL-6 antagonist with glucocorticoids were additive. *Early treatment of critically ill patients (within 24 hours of receiving organ support) appears effective in reducing disease progression and mortality.*


**Premise/Methods:** 1. The role of convalescent plasma in the treatment of COVID-19 remains unclear despite a number of studies that led to Emergency Use Authorization. 2. The outcomes were all-cause mortality at any time point, length of hospital stay, number of patients with clinical improvement or deterioration, number of patients requiring mechanical ventilation, and number of patients experiencing serious adverse events. 3. Article selection included only RCTs in peer-reviewed journals and a second analysis included RCTs from pre-prints and press releases. 4. The RCTs were included regardless of the level of plasma titer (i.e., low or high antibody titer) or health care setting.  

**Findings:** 1. Included in this analysis were 4 RCTs in peer reviewed journals, 5 RCTs published as pre-prints, and 1 RCT from the RECOVERY trial as a press release. 2. Treatment with convalescent plasma compared with placebo in combination with standard of care or only standard of care was not significantly associated with a decrease in all-cause mortality or with any benefit for other clinical outcomes among patients with COVID-19. 3. The certainty of the evidence on all-cause mortality was low for the 4 RCTs from peer reviewed journals and moderate if the additional 6 RCTs were included (5 pre-prints, 1 press release). 4. Inconsistent definitions for other clinical outcomes as well as adverse event reporting precluded further assessment. *The use of convalescent plasma during the pre-hospitalization COVID-19 was not assessed in this investigation. Whether high-antibody titer convalescent plasma in high risk patients early in the course of disease may be of benefit remains unknown.*