1. **Is there any evidence to suggest that Sars-COV-2 was made in the lab?**

the moderators can bring this back if needed but before I leave - essentially, no. The virus genome looks evolved not assembled, it is clearly related to other naturally evolved coronaviruses, there are nor chunks of RNA from other viruses.

2. **There is evidence that cytokine storm play a role for poor prognosis of sick patient from COVID 19. Any clinical guidelines for the management**

Cytokine storm does seem to be common in severe COVID patients. There are no clinical guidelines on therapy in this area but a lot of off-label use with IL-6 inhibitors. We don't know exactly which patients may benefit from these treatments and they have potential side effects (secondary infections for example). I feel strongly we should be enrolling patients in clinical trials to answer whether or not these treatments might work and should avoid widespread off-label use.

3. **Any experience or comment with treatment under investigation for critically ill patients? (e.g. anti-IL 6 vs cytokines storm) and other research protocol with WHO or else?**

There are multiple industry trials underway (Roche with tocilizumab; Sanofi with sarilumab). We also hope to study IL-6 and IL-1 inhibitors in investigator-initiated studies both ICU and non-ICU hospitalized patients but those studies are still being developed and seeking funding.

4. **I read that many patients initially present with "silent" hypoxemia…can you explain the mechanism?**

Great question. This was described in the "twitterverse". I have not seen any case series describing that these patients actually exist. I have not personally seen anyone with this syndrome "as described", nor have most of my colleagues. We use high quality monitoring devices here in Alberta. Its easy to get artifactual readings with cheaper quality portable sat monitors esp when patients are mildly hypoxemic. The body's natural response to hypoxemia is to develop respiratory distress (at least mild tachypnea).

5. **Given the relatively low percentage of positive tests from throat swabs vs sputum, why are we using throat swabs (and not sputum) now that NP swabs are hard to get?**

Great question, thanks. Patients with mild illness often can't produce sputum and have mostly upper respiratory tract disease, so sputum samples not feasible. NP and OP swabs seem to be largely equivalent - so we have switched to OP as NP swab availability is limited.

6. **Paper presented suggests serological test is available? Is it accurate?**

Serologic tests are available in some centers/countries. APL still working on our serologic testing. Accuracy depends on target (e.g. if you test for antibodies to S protein you can get cross-reactivity with other coronaviruses) so lab working on developing and validating accurate testing.

7. **Because some patient still have positive pcr after 30 days, How can we know whether the patient is still shedding active viral particle or just rna remnants at the time of discharge?**

The honest answer is that we don't know for sure but data shows that viable virus only isolated early in disease (first week or so). PCR positivity late in disease very unlikely to correlate with viable virus. We should not be retesting routinely because of this problem. We remove isolation after 14 days from symptom onset and once symptoms have resolved, whichever is longer. We don't use PCR testing to remove isolation in immune competent patients.

8. **Given these results for HCQ, why are we doing a trial in Alberta (Calgary)? Is it just a larger trial?**

Yes, we need much larger trials. Currently trials are under-powered.

9. **Can we use the newly-issued throat swabs to swab the nasopharynx instead? It's arguably better tolerated by the patient, and definitely safer for the swabber**

Good question. I don't think so. They need to validate samples in lab and likely all validation for Aptima swabs was done with OP swabs.

10. **Do we have the option of convalescent plasma in Canada? I heard of a biobank from Canadian cases.**

Not available yet but hopefully soon! A lot of work going on trying to get the national trial up and running (CONCOR). Currently pending approvals.

11. **Are there any data about the use of zinc and vit d in the treatment of covid 19?**

There are no large high quality trials at this time supporting the efficacy of either of these agents in COVID 19. Some of the enthusiasm around Zinc comes from previous trials in influenza, where the main benefit was in terms of shortening symptom duration.

12. **Any role for Vitamin C to treat COVID19?**

Great question. Unknown. But there is a plan to study this in an multicenter trial.

13. **Is redemsevir available in Canada yet? Are we testing this drug ourselves? If so, where do we get it from?**

Not available yet. It will hopefully be available via clinical trial soon. Not sure if expanded access (i.e. outside of trials) will be available in Canada. Depends on if Health Canada follows FDA approval for emergency use. So short answer is 'not yet' but things are changing very quickly.

14. **Are ACE inhibitors proven risk factors and is that the hypertension risk connection?**

Recent NEJM article suggests being on ace inhibitor might be protective against death from covid

It more unclear as times goes on. This study published yesterday argues against a strong association.

https://jamanetwork.com/journals/jamacardiology/fullarticle/2765695

15. **Here is the link to a presentation by a Louisiana group about their experience with HBOT & COVID patients.https://aawconline.memberclicks.net/2020-hbot-for-the-treatment-of-covid-19**

Thanks for the question. I am not familiar with the results of the study you posted. HBOT would certainly considered experimental for the indication of COVID19 disease. The challenge of HBOT is that there is only one machine I believe for southern Alberta and it would be extremely challenging trying to deliver this therapy to large groups of patients.

16. **Is there a validated score that helps predict who will require ICU?**

There is one called the Brescia-COVID Respiratory Severity Scale (BCRSS)/Algorithm - developed in Brescia, Italy. Haven't used it. It has not been externally validated but is available on MDCalc. Can also use generic pneumonia severity scores (such as CURB-65).

17. **So following your answer to no PCR testing recommended to prove clearance of virus, how does AHS define "Recovered" cases so far? Initially they said they test it and has to have 2 negative results. Do they just call up patients after 10 days or 14 days etc. and ask if they have no more symptoms and call it "recovered"?**

You are correct. I believe the AHS defines recovery as:
- A return to health after 14 days of isolation for those with COVID-19 but who experienced only mild symptoms.
- If hospitalized due to COVID-19, anyone who does not require additional hospitalization or treatment in the 10 days after they left the hospital.
This is from a few weeks ago…can't find a more recent definition but I think this sounds right.

18. **What would be the physiologic mechanism that explains baby lungs in the anterior part of the lungs and more collapsed lungs in the posterior part (back) of the lungs ?**

Great question. A lot of it has to do with gravity. The weight of the ventral/anterior structures (eg ventral lungs, heart, chest wall, abdomen) ends up compressing the posterior/dorsal portions. When we prone patients we try and spend 16 hours prone and 8 hours supine to try and allow that dependant compressed portion to reinflate. Another issue is that often times these patients are full of secretions that naturally drain to the posterior segments. The patients are sedated and paralysed with medication that prevents the patient from coughing these up. When we prone these patients they end up draining these secretions out. The

patients in the morning will commonly have pillows full of secretions that have drained after they have been proned overnight.

19. **Do we use the prone position for other respiratory patients on the ward, eg. COPD patients or CF patients?**

In COPD the main issue is increased airway resistance, which sadly is not helped by proning. Depending on the distribution of lung damage in CF patients, there may be some theoretical benefits in terms of V/Q matching with proning. That said, this has not been shown through any trials, and is not a routine practice in this patient population.

20. **What about smoking/ecigarette as. risk factors?**

With the caveats already mentioned around being sure to scrutinize evidence thoroughly, signal does exist towards smokers and vapers doing worse. In line with this, Dr. Hinshaw strongly recommended stepping up cessation efforts, if even for a short period of time. I believe there is no downside to cessation from a critical illness standpoint, and this should be recommended where possible.

21. **Could you speak more to these so called "happy hypoxemic" patients" - what is your advice on risk stratification? how reliable are walking spo2 tests etc as discriminators for potential clinical deterioration?**

Great question. Here is a response I posted to a similar question from someone else.

This was described in the "twitterverse". I have not seen any case series describing that these patients actually exist. I have not personally seen anyone with this syndrome "as described", nor have most of my colleagues. We use high quality monitoring devices here in Alberta. Its easy to get artifactual readings with cheaper quality portable sat monitors esp when patients are mildly hypoxemic. The body's natural response to hypoxemia is to develop respiratory distress (at least mild tachypnea).