

Covid-19 and ADRC autopsies

NP Core Leader Steering Committee

Pete Nelson

Ann McKee

Andrew Lieberman

Outline:

- Overall scope of the problems/issues
- Discussions on the ADRC Neuropath Core list-serv
- Some specific issues (testing, safety, etc.)
- Prospects of generating some sort of group-derived guidelines for helping ADRCs with autopsies
- A few notes of caution

Scope of the problem:

- All about safety and a dangerous new pathogen
- U. Kentucky autopsy suite currently is closed for safety concerns
- Most of VA systems' autopsy facilities are currently closed
- Most of the medical examiner autopsies are very curtailed

On the ADRC Neuropath list-serv, several weeks ago, we had a group (e-mail based) discussion of this topic

- ~20 ADRC Neuropath CLs participated
- Most ADRCs seemed to not be doing autopsies
- However, at least several ADRCs are doing autopsies or are soon going to be starting again
- Some are doing autopsies via proxies, off-site autopsy technicians or off-site pathologists
- Some voiced concern about taking PPEs from clinical colleagues

Neuropathology Core Steering Committee has real questions about disease specific issues

- What are true about prions, and HIV, and HCV pathogens may not be true about CV-19 (a pathogen that is highly contagious, aerosolizable, and all-too-often lethal).
- What about CV-19's aerosolizability and infectivity?
- We use N95 masks as PPE...N95 means 95% of small (0.3micron) airborne particles are removed. Is that enough?
- One may use a vacuum and/or negative pressure systems that remove most of the aerosolized particles. Is that enough?
- It may “work” 10 times, or 50 times, but still a disaster may occur
- **We want to be doing autopsies!**

New realities

- CV-19 testing (not questionnaires)
 - Safety of autopsy personnel
 - Safety of people who use the samples (“downstream” experiments)
 - Brain changes actually due to CV-19?
 - What about blood and CSF draws in the ADRC clinic or other contexts?
 - Live people testing
 - Issues related to processing & banking the blood and CSF
 - Sensitivity/specificity of the testing?
 - Serology vs PCR testing
- New autopsy methods and PPE may be required or recommended
- Maybe a dearth of short-PMI frozen samples for awhile?
- A lot of uncertainty

Some sort of consensus or group-based guidelines?

There has been some guidelines put out for CV-19 autopsies from CDC and Royal College of Pathologists in England...but those guidelines are considered by some to be not very specific, and thus incomplete.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>

<https://jcp.bmj.com/content/early/2020/03/20/jclinpath-2020-206522>

What may be helpful to the field?

- a. Recommended Covid-19 testing standards and/or procedures
 - During clinic visits for blood products and CSF?
 - After death for autopsy biosamples
- b. Guidelines about safety of different samples
 - Formalin fixation?
 - Embedding?
 - Blood, csf
- c. Recommended autopsy safety precautions and PPE?
- d. NACC/other centrally gathered data fields?
- e. Need to build in wiggle-room because this is not one-size-fits all

Where would relevant guidelines emerge?

- a. Included as part of Dr. Keene's document?
- b. Work through the NP Core Leader Steering Committee?
- c. Biospecimens Best Practices document that Dr. Silverberg and Dr. Glazier and colleagues are working on?

The notice that came out [NOT-AG-20-022](#) about COVID has a specific section on neuropathology

Notes of caution:

1. Medical examiner in Thailand apparently contracted CV-19 via an autopsy.
2. This pathogen is aerosolizable, highly contagious, often lethal, and, it's new, so there are a lot of unknowns.
3. Murphy's law (anything that can go wrong, will go wrong), also applies.
4. Primarily, we don't want any autopsy or research worker to get infected.
5. If someone got very sick and/or died due to an autopsy or biosample, it would be a great tragedy in itself, primarily, but beyond that, secondarily, it may broadly and meaningfully set back present and future research efforts.

So, there are fairly reasonable bases to be careful at least for the near future.