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Risk Assessment of Autopsy-Acquired SARS-CoV-2 Coronavirus (COVID-19)

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We read with concern the article by Davis and Williamson\(^1\) on the risk of COVID-19 transmission during autopsy, where the authors report a low risk for autopsy-acquired COVID (1:675). The analysis is deeply flawed.

The authors report data with an unusual leniency of detail. The authors report that “at least 225 autopsies” with “1-6 personnel per autopsy” where “at least 102 had brain removal”. The authors do not inform on the duration, response rate or bias assessments of their survey. There is no information on whether COVID-positive status was confirmed at autopsy (plausibly some patients had cleared their COVID infection and died of secondary complications). Most importantly, there is no information on the frequency, duration or method of monitoring of exposed personnel, or what proportion of personnel underwent laboratory testing.

The authors’ calculations and comparisons are creative, conflate risks and rates and are not corrected for time or geography.\(^2\) The risk of COVID-acquisition from autopsy cannot be calculated or approximated as 1:675 if the infection is not considered to be autopsy-acquired. The tenuously calculated supposed “risk” cannot be compared to the aggregate *incidence rate* of the US population. The population incidence rate of 1:201 is a measure of the incidence of laboratory-confirmed COVID-19 in all 50 states of the US for the full 5-month duration of the pandemic. The authors’ data does not even overlap with respect to time; also, their data are drawn from only 14 states. Furthermore, the risk of transmission of COVID-19 from autopsy should be compared to the risk of transmission of COVID-19 from *not* doing COVID-positive autopsies. The latter is zero.
The authors’ conclusion that “a risk of 1:675 is “exceedingly little” is subjective and not factual. Risk is assessed as acceptable or not, using a frequency, severity matrix, which balances the probability and severity of harm with potential benefits. “High risk” becomes societally and individually acceptable when something of higher value is at stake e.g. physicians accept the risk for COVID infection and treat/assess COVID-infected patients because a patient’s life hangs in the balance. One would not accept a much lower risk, if, for example, a mouse’s life hung in the balance.

Autopsies are critical to understand the pathobiology of a novel emerging disease, to inform management strategies and for tissue acquisition for research towards prevention and cure. This report serves to undermine the value of the autopsy, by glibly ascribing a “low risk” for autopsy-acquired COVID-19. This report also has the unfortunate potential for harm to trainees, who report being threatened by directors with no/poor recommendations should they refuse to participate in COVID-positive autopsies. At the moment, we have no concrete evidence that COVID-19 transmission occurs from exposure at autopsy.
References
